



“Financial determinants of environmental, social and governance performance: Empirical evidence from India”

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FINANCIAL DETERMINANTS OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE PERFORMANCE: EMPIRICAL EVIDENCE FROM INDIA

Abstract

The present study aims to examine the firm-level financial determinants of ESG performance. It elucidates what financial resources it takes to enable the integration of ESG practices and improve a firm's ESG scores, based on a sample of 94 Indian firms listed on the National Stock Exchange of India between 2015 and 2020. Econometrically, the study employs fixed effects and random effects panel data models as an appropriate methodology. The findings show that firm size, asset intangibility, analyst coverage, and operating cash flow influence firms' ESG scores positively, whereas leveraging and strategic holding impact them negatively. In addition to the mentioned variables, cash holdings positively influence firms' environmental, social, and governance scores. While dividend yield does not contribute to combined ESG and governance scores, it has a positive impact on a firm's environmental and social scores. This is the first study examining the determinants of firm-level ESG performance in an emerging market. Results endorse the interaction of legitimacy theory and slack resource theory in determining a firm's ESG performance.

Keywords

financial determinants, ESG, cash holdings, cash flow, firm size, analyst coverage, asset intangibility

JEL Classification

G30, O16

INTRODUCTION

Under the environmental, social and governance (ESG) integration movement, financial institutions are influencing corporates to adopt ESG practices in their core business activities (De la Fuente et al., 2022). Consequently, significant investment has been directed toward ESG stocks, making them a significant portion of the global equity portfolios (Daugaard, 2020). Adoption and implementation of ESG activities by corporations (under the influence of the financial institutions) have motivated them to provide and improve their ESG disclosures (Baldini et al., 2018), which cover firms' initiatives to reduce their carbon footprints and their commitments toward various stakeholders such as investors, government, employees, consumers, and society (Malik, 2015). In addition to the standard financial data, an ESG analyst augments ESG disclosures for investing purposes. Investors may be time-constrained; thus, they may rely on processed data such as ESG ratings and scores (Van Duuren et al., 2016). ESG ratings and scores characterize the ESG performance of firms.

Several studies emphasize the role played by ESG integration toward the value creation of firms (Van Durren et al., 2016; Cappucci, 2018) and the interaction between ESG disclosures and financial performance. However, studies examining what it takes for a firm to integrate ESG practices and improve its overall ESG performance are



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scant. The present study examines firm-level financial determinants of the ESG scores for Indian firms using panel data for six years from 2015 to 2020. India is the world's fifth-largest economy in terms of nominal GDP (Mitra et al., 2023). Moreover, the mandatory reporting of Business Responsibility and Sustainability Reporting (BRSR) for the top 1,000 companies in India underlines the significance of undertaking this study. This study investigates firm-level financial determinants of ESG, such as cash holdings, asset intangibility, analyst coverage, net working capital, dividend yield, strategic holdings, etc. ESG scores better exemplify a firm's ESG integration than mere voluntary disclosures. Also, a low correlation among the environmental, social, and governance scores makes a case for an independent investigation of their determinants.

1. LITERATURE REVIEW

Continued attention to ESG issues and their integration into corporate strategic activities and disclosures has attracted a large body of academic research. Several studies in the recent past have examined the impact of firm ESG/CSR disclosures and performance on financial performance. For instance, Chen and Xie (2022) highlighted the role of ESG disclosures and integration in improving financial performance and firm value creation. Giese et al. (2019) explain three transmission channels from ESG integration to firm value creation: cash flow, idiosyncratic risk, and systematic risk. Gregory et al. (2014) elucidate the economic rationale of the cash flows channel by emphasizing the better competitiveness of substantial ESG firms. Competitive advantage helps generate abnormal returns for the high ESG firms, leading to better profitability, higher pay-outs and enhance firm value. Godfrey, et al. (2009) and Jo and Na (2012) attribute the high firm value of ESG firms to their better risk management process, which in turn leads to reduced tail risk for the firm's stock price. Eccles et al. (2014) and El Ghouli et al. (2011) explain the systematic risk channel of firm value creation by highlighting the long-term focus of the ESG firms. Long-term focus leads to lower systematic risk and lesser discounting rate, ultimately leading to better value creation. Li et al. (2022) reported that ESG integration reduces firm default risk. Eliwa et al. (2021) investigated whether lending institutions integrate ESG disclosures and performance in their credit analysis. Ademi and Klungseth (2022) reported that organizations with exceptional ESG performance outperform their industry rivals financially and are valued more in the market. ESG disclosures and integration create a positive perception of a company in the product market leading to favorable financial

results and stable earnings. Stable earning leads to improved firm performance in dividend payment (Mitton, 2004). Benlemlih's (2019) study indicates a positive association between ESG activities and dividend payments. ESG practices enrich a firm's growth opportunities by enhancing stakeholders' trust and reducing risk and uncertainty (De la Fuente et al., 2022). Interestingly, Khan's (2022) study, based on bibliometric and meta-analysis, reports an inclusive association between ESG and firm financial performance.

Limited studies are available which examine the determinants of firms' ESG performance. El Khoury et al. (2021) reported that ESG scores are positively impacted by firm size and negatively by firm performance. At the country level, economic development yields a negative impact on the environmental pillar score, while social pillar score shows a positive impact. Some recent studies have reported heterogeneity of ESG activities and their varying influence on financial performance and value creation (D'Hondt et al., 2022; El Khoury et al., 2021). Chelawat and Trivedi (2016) found a strong positive relationship between firms' environmental pillar and financial performance. Velte (2017) indicated that ESG has a favorable influence on return on assets. However, a subsequent study revealed that governance had a more significant impact on financial performance when compared to combined ESG scores. Chen and Xie (2022) described that the favorable effect of ESG disclosure on corporate financial performance is more evident in firms with ESG investors, corporations with a long history, considerable media attention, and high agency cost. Ademi and Klungseth (2022) stated that the ESG score influences both Tobin's Q and return on capital employed. Gompers et al. (2001) reported that investing in firms with better corporate governance generated higher returns for investors than investing

in companies with lower levels of corporate governance. De la Fuente et al. (2022) reported that ESG enriches firms' growth opportunities. Moreover, this has become stronger for the environmental and social pillars. Saygili et al. (2022) reported that among the ESG components, governance-related disclosures have a more significant impact on corporate financial performance.

These parameters of ESG are significant because they enable firms to create a greater positive impact on the globe and because socially conscious investors are now screening possible investments using ESG criteria. Professional and retail investors prefer to think about ESG more holistically than apply exclusion criteria to their asset allocation. Nevertheless, it seems that for asset managers, governance is more crucial than social and environmental considerations (Van Durren et al., 2016). Compared to their counterparts, businesses with social environment practices have reduced financial volatility because these policies protect businesses from shocks and help them return to where they want to be (Ortiz-de-Mandojana & Bansal, 2015). However, some companies excel at creating glossy brochures and vibrant sustainability reports but struggle to successfully incorporate ESG principles into their business processes (Cappucci, 2018). To properly analyze non-financial risks and opportunities, ESG integration is crucial. A business is more susceptible to events that can damage its reputation and competitive position if it does not understand or controls its ESG risks (Fernandez & Elfner, 2015).

A careful examination of the ESG literature suggests that the results of empirical studies vary across countries and industries (Chelawat & Trivedi, 2016; Reverte, 2009), and so do the strategies (Martins, 2021). Most of the studies in the context of determinants of ESG integration are conducted in the context of advanced economies such as Western Europe, Nordic countries, the US, and China. Limited studies are available in the context of emerging market economies. This is the first study that has been conducted so far to examine the firm-level determinants in the context of India.

The present study investigates firm-level financial determinants of the ESG scores for Indian firms. This study departs from the previous studies in

two ways. First, it uses the ESG scores rather than the voluntary ESG disclosures by the firms. ESG scores are a better exemplification of a firm's ESG performance as they show a practical commitment of the firm towards integrating ESG activities in its strategic plan. Second, in addition to the combined ESG score, this study independently investigates the determinants of environmental, social, and governance scores. A low correlation among the environmental, social, and governance scores make a case for an independent investigation of their determinants. The environmental pillar is interwoven in the expansion of threats owing to climate change, the depletion of natural resources, and toxic waste discharges by industries. The social pillar includes working conditions, a firm's behavior toward stakeholders, product standards, building long-term relations across the value chain, and other comparable characteristics. There is board diversity and inclusivity, accountability, fraud mitigation, transparency, and much more under the governance pillar of ESG.

Researchers have applied legitimacy theory to explain the voluntary ESG disclosures by firms. Legitimacy theory postulates that a firm will willingly report its engagement in ESG activities as a communication tool if the management perceives that these disclosures were expected by the society in which the firm operates. Studies employing legitimacy theory in a firm's ESG disclosures suggest that these disclosures are responses to the pressure from the stakeholders of the firms (Bhatt & Joshi, 2022) or social visibility requirements arising from environmental concerns such as the decarbonization movement and violation of human rights (Rezaee, 2016). In contrast to the ESG disclosures, ESG integration requires a commitment of resources and management time, and its benefits are realized by the firm over the medium to long term (Fernandez & Elfner, 2015) by lowering earnings volatility, enhancing growth opportunities, and improving the firm's survival and valuation. This study proposes that a firm's resources, such as its size, cash holdings, robust cash flows, liquidity; financial flexibility measured in terms of lower leverage; growth opportunities and planned capital expenses; dividend payment capacity; ownership structure; tangibility of its assets; and intensity of monitoring by the capital market tend to influence its ESG performance.

Slack resource theory suggests that firms possessing significant financial, managerial, and technical resources are more likely to respond to shareholder pressure compared to their counterparts with limited slack resources (Xiao et al., 2018). Based on slack resource theory and legitimacy theory, it is proposed that a firm's financial and managerial resources and characteristics, such as their asset tangibility, available growth opportunities and analyst coverage, can play an important role in determining its commitment towards ESG integration. Off late, researchers reported a significant positive relationship between profitability and ESG (Chen & Xie, 2022).

Financially constrained firms hold cash for precautionary motives (Opler et al., 1999; Joshi, 2021), and during periods of economic shocks, firms with larger cash holdings generate positive abnormal returns (Joshi, 2022). Therefore, the present study proposes that firms with larger cash holdings, better liquidity, and robust cash flows tend to show better ESG performance. Byoun (2011) argued that firms adjust their leverage according to a stage of building financial flexibility, and firms with low to moderate debt enjoy greater financial flexibility. It is proposed that firms with low to moderate leverage tend to have better flexibility to commit resources toward ESG integration. Firms with intangible asset bases have lower carbon footprints and enhanced focus on social causes. These well-governed firms well can outperform their counterparts in terms of ESG integration. Sustainable firms attract long-term investors (Verga Matos et al., 2020). These firms can engage with their shareholders by paying dividends and maintaining better dividend yield. However, higher dividend payments to maintain dividend yield may reduce the financial resources available for ESG commitment. Therefore, it is proposed to test the association of a firm's dividend payment and dividend yield with its ESG performance.

Several studies have found a positive relationship between firm size and CSR performance (Reverte, 2009; Baldini et al., 2018). Therefore, this study proposes a size bias for the firm's ESG performance. Legitimacy theory suggests that larger and reputed firms face tighter scrutiny by capital market participants. Analyst coverage serves as a proxy for capital market scrutiny in this study; this study propos-

es a positive association between analyst coverage and a firm's ESG performance. De la Fuente et al. (2022) predicted that the trust-enhancing and risk-reducing effect of ESG integration influences the value of a firm's growth opportunities. This study proposes a value-enhancing role of growth opportunity and capital expenditures for a firm's ESG performance. Family and promoter-controlled firms are essential in many emerging economies, including India (Ashwin et al., 2015). Promoter holdings in a family-controlled firm is relatively high, and their primary goal is to protect a legacy for future generations. This, in turn, provides a long-term perspective to the firms, enabling them to integrate ESG activities at relative ease. On the other hand, higher promoter holding may result in reduced stakeholders' pressure and slack governance norms. It is proposed to test the association between strategic holding and a firm's ESG performance. The following hypotheses statements summarize the assumptions about the financial determinants of firms' ESG score.

- H1: Cash holdings improve the ESG, environmental, social, and governance performance.*
- H2: Asset intangibility adversely impacts the ESG, environmental, social, and governance performance.*
- H3: Analyst coverage improves the ESG, environmental, social, and governance performance.*
- H4: Net working capital improves the ESG, environmental, social, and governance performance.*
- H5: Dividend yield may impact the ESG, environmental, social, and governance performance.*
- H6: Strategic holdings may impact the ESG, environmental, social, and governance performance.*

2. RESEARCH METHODOLOGY

To determine the firm-level determinants of ESG performance for Indian firms, data have been collected from Thomson Reuters' Eikon database over six years, i.e., 2015–2020. The primary sam-

ple consists of data from the top 500 companies in market capitalization listed on the National Stock Exchange (NSE). By removing the banking and financial firms from this, the sample size has been reduced to 410 non-financial firms. Out of the 410 firms, the firms with (a) unavailability scores of ESG, environmental, social, and governance and (b) missing values of any firms' financial characteristics have been excluded. Finally, there were 94 ESG firms with complete data for six years. By using a model of panel data regression analysis, the effect of firm-level specific variables on the overall ESG score, and its composite Environmental, Social, and Governance pillars scores have been examined.

The dependent variables – ESG, environmental, social, and governance scores, were directly retrieved from the Thomson Reuters database. The control variables were selected from empirical studies (Javadi, 2020; Joshi, 2019). Below is a description of dependent variables (DV), explanatory variables (EV) and control variables (CV).

Panel data regression equations were formulated to examine the relationship of a firm's ESG, environmental, social, and governance scores with the firm-level financial and non-financial variables.

Panel regression equations for fixed and random effects:

$$ESG\ Score_{i,t} = \alpha_1 + \beta_1 CHO_{i,t} + \beta_2 AIB_{i,t} + \beta_3 ANY_{i,t} + \beta_4 NWC_{i,t} + \beta_5 DYD_{i,t} + \beta_6 SHD_{i,t} + \beta_7 LVG_{i,t} + \beta_8 CFL_{i,t} + \beta_9 GOP_{i,t} + \beta_{10} SZE_{i,t} + \beta_{11} CEX_{i,t} + \varepsilon_i \tag{1}$$

$$Environment\ Pillar\ Score_{i,t} = \alpha_1 + \beta_1 CHO_{i,t} + \beta_2 AIB_{i,t} + \beta_3 ANY_{i,t} + \beta_4 NWC_{i,t} + \beta_5 DYD_{i,t} + \beta_6 SHD_{i,t} + \beta_7 LVG_{i,t} + \beta_8 CFL_{i,t} + \beta_9 GOP_{i,t} + \beta_{10} SZE_{i,t} + \beta_{11} CEX_{i,t} + \varepsilon_i \tag{2}$$

$$Social\ Pillar\ Score_{i,t} = \alpha_1 + \beta_1 CHO_{i,t} + \beta_2 AIB_{i,t} + \beta_3 ANY_{i,t} + \beta_4 NWC_{i,t} + \beta_5 DYD_{i,t} + \beta_6 SHD_{i,t} + \beta_7 LVG_{i,t} + \beta_8 CFL_{i,t} + \beta_9 GOP_{i,t} + \beta_{10} SZE_{i,t} + \beta_{11} CEX_{i,t} + \varepsilon_i \tag{3}$$

$$Governance\ Pillar\ Score_{i,t} = \alpha_1 + \beta_1 CHO_{i,t} + \beta_2 AIB_{i,t} + \beta_3 ANY_{i,t} + \beta_4 NWC_{i,t} + \beta_5 DYD_{i,t} + \beta_6 SHD_{i,t} + \beta_7 LVG_{i,t} + \beta_8 CFL_{i,t} + \beta_9 GOP_{i,t} + \beta_{10} SZE_{i,t} + \beta_{11} CEX_{i,t} + \varepsilon_i \tag{4}$$

where α – Intercept, β – Coefficient of explanatory variables, ε – Error term.

Table 1. Variables and their symbols and description

S.No.	Variables	Symbol	Type	Description or Calculation
1	Environmental, Social and Governance Performance	ESG	Dependent variable	Overall score of a firm based on reported information on environmental, social, and governance scores
2	Environmental Pillar	E	Dependent variable	A firm's impact on living and non-living
3	Social Pillar	S	Dependent variable	A firm's capacity to build trust with stakeholders
4	Governance Pillar	G	Dependent variable	A firm's system and process which ensure best interest of shareholders
5	Cash holdings	CHO	Explanatory variable	(cash + short-term investments)/ total assets
6	Asset Intangibility	AIB	Explanatory variable	1- {(plant + property+ equipment)/total assets}
7	Analyst Coverage	ANY	Explanatory variable	Number of analysts covering the firm
8	Net Working Capital	NWC	Explanatory variable	(Net working capital + net of cash holdings) / total assets
9	Dividend Yield	DYD	Explanatory variable	Book value of share/market value per share
10	Strategic Holdings	SHD	Explanatory variable	Percent of strategic ownership
11	Leverage	LVG	Control Variable	(Total debt) / (market value of equity + total assets)
12	Cash Flow	CFL	Control Variable	Earnings before interest, tax, depreciation and amortization / total assets
13	Growth opportunities	GOP	Control Variable	(Market value of equity + book value of total liabilities) / total assets
14	Size	SZE	Control Variable	Natural logarithm of total assets
15	Capital Expenditure	CEX	Control Variable	Capital expenditure/ total assets

3. RESULTS

The descriptive statistics for ESG scores and their determinants are presented in Table 2. The average ESG score is 38.548, with a maximum value of 92.748. Because the scores are given on a scale of 0-100 in the Thomson Reuters database, most companies from the sample fall into the second quarter, demonstrating transparency in reporting. The combined ESG, environmental, social, and governance scores of all organizations differ tremendously due to the considerable variation. For instance, average and maximum dividend yields depict the companies at the maturity stage's start and end, respectively. The average sample firm has cash holdings to the total asset of 15.1 per cent, followed by 11 analysts and 54.2 per cent of strategic holdings. In addition, the average firm exposes a net working capital to total assets of 13.3 percent, leverage of 23.1 percent, and growth opportunities of 4.223.

Tables 3, 4, 5, and 6 present the results of panel regression analysis using pooled cross-section, fixed effects, and random effects models for the ESG scores, environmental pillar scores, social pillar scores, and governance pillar scores, respectively. z-statistics/t-statistics are presented in the tables below. Symbols *, **, and *** represent the significance level at 10, 5, and 1%, respectively.

Table 3 presents the panel regression analysis estimation results, where ESG has been regressed on the firm-level determinants. A statistically significant positive coefficient of cash holdings suggests that increased levels of cash holdings have a positive effect on ESG scores. On the other hand, asset intangibility,

analyst coverage, cash flow, and size are very strong and statistically significant for ESG scores, depicting that with an increase in asset intangibility, analyst coverage, cash flow, and size, there is an increase in the ESG scores. However, strategic holdings have a statistically significant negative coefficient, indicating the adverse impact of promoter holding on a firm's ESG performance.

Table 3. Regression results for ESG combined scores on firm-level financial variables using pooled cross-section, fixed effect, and random effect

Financial Variables	Pooled cross-section	Fixed Effect	Random Effect
Cash Holdings	24.063** (2.32)	29.681** (2.44)	29.681** (2.44)
Asset Intangibility	19.068*** (3.44)	12.333 (1.61)	12.333 (1.61)
Analyst Coverage	0.232*** (4.89)	0.176*** (3.24)	0.176*** (3.24)
Net-Working Capital	-5.537 (-0.65)	-6.906 (-0.68)	-6.906 (-0.68)
Dividend Yield	33.956 (1.48)	56.461** (2.27)	56.461** (2.27)
Strategic Holdings	-17.177** (-1.96)	-32.011** (-2.41)	-32.011** (-2.41)
Leverage	-0.701 (-0.12)	2.026 (0.26)	2.026 (0.26)
Cash Flow	64.533*** (4.57)	62.919*** (3.89)	62.919*** (3.89)
Growth Opportunities	0.110 (0.38)	-0.471 (-1.15)	-0.471 (-1.15)
Size	13.360*** (9.49)	14.541*** (4.88)	14.541*** (4.88)
Capital Expenditure	6.754 (0.44)	10.890 (0.65)	10.890 (0.65)
Intercept	-329.701*** (-8.77)	-346.208*** (-4.44)	-329.742*** (-8.68)
R Square		0.37	0.37

Table 2. Descriptive statistics

Variables	Mean	Median	Standard Deviation	Minimum	Maximum
ESG	38.548	44.519	28.227	0.000	92.748
Environmental Score	33.620	32.450	29.061	0.000	94.145
Social Score	42.395	46.177	32.142	0.000	96.750
Governance Score	36.849	36.612	29.564	0.000	96.620
Cash holdings	0.151	0.118	0.126	0.000	0.751
Asset Intangibility	0.633	0.701	0.271	-1.105	0.999
Analyst Coverage	11.012	1.000	13.587	0.000	47.000
Net working capital	0.133	0.124	0.181	-0.500	0.639
Dividend yield	0.024	0.012	0.038	0.000	0.477
Strategic holdings	0.542	0.558	0.167	0.042	0.924
Leverage	0.231	0.183	0.244	0.000	1.449
Cash Flow	0.162	0.142	0.094	-0.027	0.847
Growth opportunities	4.223	1.972	5.951	0.109	37.659
Size	25.955	25.680	1.396	22.625	29.936
Capital Expenditure	0.065	0.054	0.060	0.000	0.966

Table 4. Regression results for environmental scores on firm-level financial variables using pooled cross-section, fixed effect, and random effect

Financial Variables	Pooled cross-section	Fixed Effect	Random Effect
Cash Holdings	18.486* (1.82)	19.788* (1.67)	18.521* (1.80)
Asset Intangibility	16.252*** (2.98)	13.939* (1.86)	16.235*** (2.94)
Analyst Coverage	0.238*** (5.15)	0.217*** (4.09)	0.237*** (5.09)
Net-Working Capital	-7.148 (-0.85)	-6.072 (-0.62)	13.974 (-0.84)
Dividend Yield	58.882*** (2.64)	73.860*** (3.05)	59.266*** (2.62)
Strategic Holdings	-14.159 (-1.64)	-22.792* (-1.76)	-14.269 (-1.62)
Leverage	3.532 (0.61)	5.040 (0.66)	3.521 (0.60)
Cash Flow	60.186*** (4.37)	62.646*** (3.98)	60.305*** (4.33)
Growth Opportunities	0.201 (0.71)	-0.204 (-0.51)	0.195 (0.68)
Size	13.987*** (10.02)	13.184*** (4.54)	13.974*** (9.81)
Capital Expenditure	8.801 (0.59)	11.760 (0.72)	8.846 (-0.84)
Intercept	-353.784*** (-9.49)	-326.347*** (-4.30)	-353.390*** (-9.30)
R Square		0.447	0.472

Table 4 presents the estimation results of panel regression analysis for environmental scores. Cash holdings are statistically significant for environmental scores. A very strong statistically significant asset intangibility, analyst coverage, cash flow, size, and dividend yield depict that higher these variables have a positive effect on environmental scores. Furthermore, strategic holdings are significant but negatively affect environmental scores.

Table 5. Regression results for social scores on firm-level financial variables using pooled cross-section, fixed effect, and random effect

Financial Variables	Pooled cross-section	Fixed Effect	Random Effect
Cash Holdings	21.666* (1.84)	26.122* (1.89)	21.670* (1.82)
Asset Intangibility	19.709*** (3.15)	12.845 (1.47)	19.708*** (3.11)
Analyst Coverage	0.270*** (4.98)	0.201*** (3.24)	0.270*** (4.92)

Financial Variables	Pooled cross-section	Fixed Effect	Random Effect
Net-Working Capital	-10.963 (-1.13)	-11.311 (-0.98)	-10.963 (-1.12)
Dividend Yield	64.808** (2.48)	84.567*** (2.99)	64.828*** (2.45)
Strategic Holdings	-10.789 (-1.09)	-39.140** (-2.59)	-10.802 (-1.08)
Leverage	-0.345 (-0.05)	7.689 (0.87)	-3.451 (-0.05)
Cash Flow	72.206*** (4.50)	67.340*** (3.66)	72.206*** (4.45)
Growth Opportunities	0.186 (0.57)	-0.712 (-1.53)	0.186 (0.57)
Size	15.438*** (9.80)	15.553*** (4.59)	15.437*** (9.68)
Capital Expenditure	2.341 (0.13)	9.698 (0.51)	2.346 (0.13)
Intercept	-386.21** (-9.18)	366.575*** (-4.14)	386.186*** (-9.07)
R Square		0.438	0.449

The results presented in Table 5 provide evidence of the role of firm-level variables in determining social scores. Starting with cash holdings, the positive significance confirms that higher cash holdings tend to have higher social scores. While leverage presents its expected positive sign, it is not significant. Asset intangibility, analyst coverage, cash flow, size and dividend are very strong and statistically significant. The negative impact of strategic holdings signals that fewer strategic holdings tend to increase more social scores.

Table 6. Regression results for governance scores on firm-level financial variables using pooled cross-section, fixed effect, and random effect

Financial Variables	Pooled cross-section	Fixed Effect	Random Effect
Cash Holdings	32.759*** (2.68)	40.201*** (2.86)	32.836*** (2.66)
Asset Intangibility	19.849*** (3.01)	11.259 (1.27)	19.790*** (2.96)
Analyst Coverage	0.155*** (2.81)	0.093 (1.48)	0.154*** (2.78)
Net-Working Capital	1.564 (0.16)	-0.433 (-0.04)	1.554 (0.15)
Dividend Yield	-43.047 (-1.61)	-16.157 (-0.56)	-42.656 (-1.58)
Strategic Holdings	-26.444** (-2.51)	-32.698** (-2.13)	-26.506** (-2.48)
Leverage	-3.623 (-0.52)	-6.161 (-0.68)	-3.688 (-0.52)

Table 6 (cont.). Regression results for governance scores on firm-level financial variables using pooled cross-section, fixed effect, and random effect

Financial Variables	Pooled cross-section	Fixed Effect	Random Effect
Cash Flow	54.998*** (3.33)	51.457*** (2.75)	54.911*** (3.29)
Growth Opportunities	-0.028 (-0.08)	-0.220 (-0.46)	-0.030 (-0.09)
Size	9.426*** (5.49)	13.308*** (3.86)	9.436*** (5.40)
Capital Expenditure	10.619 (0.59)	11.131 (0.57)	10.643 (0.59)
Intercept	-217.809*** (-4.57)	-308.417*** (-3.43)	-217.984*** (-4.68)
R square		0.176	0.229

Table 6 provides evidence that cash holdings, asset intangibility, analyst coverage, cash flow, and size in the Indian sample firms are very strong and statistically significant in influencing the governance scores. However, strategic holdings are negative and strongly statistically significant for governance scores. Meanwhile, growth opportunities, net working capital, and dividend yield have a negative but not statistically significant effect on governance scores.

Table 7. Hausman test for ESG, Environmental, Social, and Governance on firm-level financial variables

Variables	Values	Random or Fixed Effect
ESG	18.80 (0.09)	Fixed Effect
Environmental	10.58 (0.56)	Random Effect
Social	24.37 (0.01)	Fixed Effect
Governance	14.82 (0.25)	Random Effect

Table 7 describes the Durbin-Wu-Hausman test used to confirm the suitability of fixed or random effects models. The fixed effect is valid for ESG and social pillar scores, and for environmental and governance pillar scores, the random effect is applicable. The following table summarises the results on the relationship between firms' ESG scores and financial determinants.

Table 8. Key findings of results

S. No.	Variables	Proposed Association	Result	Accepted/ Rejected
1	Cash Holdings	(+)ive	(+)ive Significant	Accepted
2	Leverage	(-)ive	No effect	Rejected
3	Asset Intangibility	(+)ive	(+)ive Significant	Accepted
4	Analyst Coverage	(+)ive	(+)ive Significant	Accepted
5	Cash Flow	(+)ive	(+)ive Significant	Accepted
6	Growth Opportunities	(+)ive	No effect	Rejected
7	Size	(+)ive	(+)ive Significant	Accepted
8	Net Working Capital	(+)ive	No effect	Rejected
9	Capital Expenditure	(+)ive	No effect	Rejected
10	Dividend Yield	Non-directional	Positive Significant	Rejected
11	Strategic Holding	Non-directional	Negative Significant	Rejected

4. DISCUSSION

Cash holdings minimize transaction costs that also mitigate against future liquidity, a common motive of managers known as a precautionary motive of cash holdings (Joshi, 2021). Suppose the firm has enough funds for future investment. In that case, it may execute ESG practices as increased cash holdings provide them with confidence, allowing them to perform better in acquiring (by expense on) ESG scores. To illustrate, attaining environmental scores is about reducing hazardous waste discharge or utilizing less non-renewable resources in manufacturing. To increase social scores, if a business has extra cash holdings, the cash can be used for the welfare of society by providing free education or development programs, which can indirectly benefit the firm's workers. In the case of governance scores, poorly governed firms with higher agency costs of managerial discretion hold less cash, and vice versa.

On the other hand, firms with intangible asset bases have lower carbon footprints and enhanced focus on social causes, helping increase environmental scores and enhancing the social scores of firms. These well-governed firms can outperform their counterparts in terms of ESG integration. Sustainable firms attract long-term investors

(Verga Matos et al., 2020). These businesses can engage with their shareholders by paying dividends. These are maintaining a higher dividend yield and balancing the interest of all stakeholders by taking care of the shareholders (stakeholder theory) and reducing agency costs. However, the dividend yield results for the governance scores are confounding; it can also be high because of lower market capitalization, which may validate a negative association between the scores.

In addition to the above results, better cash flow revocation could be accomplished by consumers increasing demand for a company's green product or service, suppliers providing better access to labor, or investors providing better access to financial capital. Through this, firms are not enhancing the ESG scores but also improving their pillars. For instance, companies working on green products are more inclined to use resources that are not harming the environment, provided by different stakeholders validating the legitimacy theory. Nevertheless, analyst coverage is a proxy for capital market research scrutiny. Reducing the

information asymmetry increases the transparency for the organization and enhances the ESG scores and its pillars. All resources (cash holdings, asset intangibility, analyst coverage, firm size, and cash flows) support and validate the slack resource theory and legitimacy theory.

ESG integration is long-term value creation for investment (Cappucci, 2018; Eccles & Kastropeli, 2017). Furthermore, for long-term investment, strategic holdings are vital. Higher promoter holdings undoubtedly have a long-term perspective, but promoters' stake in firms reduces stakeholders' pressure and slack governance norms. Because firms with diffuse ownership are under more pressure (legitimacy theory) than family-controlled firms. For companies for which the long-term investment is low by the capital holders, there are high ESG scores. Leverage and growth opportunities of a firm negatively impact ESG scores and its pillars but are not significant for sample firms of the study. However, net working capital and capital expenditure had a positive but insignificant impact.

CONCLUSION

This study reports the firm-level financial determinants of ESG, environmental, social and governance performance. Results indicate that cash holdings positively influence the ESG, environmental, social, and governance scores at the lowest significance level. Firm size, asset intangibility, cash flow, and analyst coverage impact the combined ESG scores and all its pillar scores positively at the highest significance level. Contrarily, dividend yield impacts the combined ESG, environmental, and social scores, but does not affect the governance score. Strategic holdings negatively influence combined ESG, social and governance scores. Therefore, it can be concluded that there are several common firm-level financial determinants of a firm's environmental, social and governance performance, barring dividend yield and strategic holdings.

This study provides both theoretical and practical implications. First, it broadens the existing academic literature on determinants of corporate ESG integration by substantiating the significance of firm-level determinants in the context of one of the largest emerging markets, India. Second, in light of the recent development by Securities and Exchange Board of India (SEBI) regarding the Business Responsibility and Sustainability Report (BRSR), which has imposed more rigorous regulations on ESG disclosures for listed companies in India (SEBI, 2021), this study provides valuable insights on ESG determinants to the regulators and listed companies. Businesses can use these findings to understand what it takes to integrate ESG activities in their core business activities, and how the determinants of environmental, social, and governance converge or diverge. Similarly, the present study provides valuable insights to investors on how to evaluate a firm's ESG performance.

The present study uses conventional panel data regression analysis to establish a causal relationship between ESG and their financial determinants. Researchers can explore variables mediating and moderating the relationship between ESG and firm performance. The findings of this study are limited to

large non-financial companies. The results may differ for medium and smaller companies, as well as for financial companies. Differences in regulatory and institutional environment across developed and developing countries can cause variation in firm-level financial determinants of ESG. Thus, researchers can conduct studies across multiple countries to ascertain the financial determinants of ESG worldwide. Moreover, further research can be conducted considering various non-financial determinants of ESG.

AUTHOR CONTRIBUTIONS

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Investigation: Himanshu Joshi.
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