Minnesota Journal of Business Law and Entrepreneurship

Volume 2026, No. 1

ISSN: 1540-3270

The ESG–Financial Performance Relationship: An Investigation of India's Cement Industry

Dr Varsha Goyal[1], Kavita Pareek[2], Dr. Ashok Sengupta[3*], Dr. Reenu Bansal[4]

[1]Assistant Professor, Jaypee Institute of Information Technology, Noida-India

[2]Assistant Professor, Lexicon Management Institute of Leadership and Excellence, Wagholi, Pune-India

[3*]Assistant Professor, School of Management Sciences, Lucknow-India

[4]Assistant Professor, Christ University, Bangalore-India

[*]Correspondence Author: **Dr. Ashok Sengupta**

Abstract

This study investigates the relationship between Environmental, Social, and Governance (ESG) performance and the financial performance of selected firms in the Indian cement industry. The analysis focuses on leading companies such as UltraTech Cement, Ambuja Cements, ACC Limited, Shree Cement, and Dalmia Bharat Limited. The study aims to examine how ESG practices influence corporate financial outcomes while controlling for firm-specific factors such as firm size and leverage. Panel data covering the period 2016–2025 were analyzed using descriptive statistics, partial correlation analysis, and panel regression techniques. The descriptive statistics indicate moderate financial performance and relatively consistent ESG scores across the selected firms. Correlation results reveal strong relationships between ESG indicators and financial performance variables, suggesting that sustainability practices are closely linked with corporate outcomes. Partial correlation analysis, controlling for debt and sales, shows significant associations between ESG dimensions and financial performance indicators such as return on assets (ROA) and return on equity (ROE). Furthermore, the panel regression analysis demonstrates that ESG performance has a meaningful influence on financial performance. Environmental, social, and governance factors generally exhibit positive relationships with profitability, although some ESG initiatives may involve short-term costs. Firm size shows a positive relationship with financial performance, while leverage has a negative impact. Overall, the findings suggest that companies adopting strong ESG practices are more likely to achieve sustainable financial performance and long-term competitiveness. The study highlights the growing importance of integrating sustainability and responsible governance into corporate strategy within the cement industry.

Keywords: ESG Performance, Financial Performance, Cement Industry, Panel Data Analysis, Corporate Sustainability.

1. Introduction

In recent years, the concept of Environmental, Social, and Governance (ESG) practices has emerged as an important dimension of corporate strategy and sustainability. Investors, regulators, and stakeholders increasingly evaluate firms not only on financial outcomes but also on their environmental responsibility, social commitment, and governance quality. ESG integration has therefore become a significant determinant of corporate reputation, risk management, and long-term value creation (Eccles et al., 2014; Friede et al., 2015). As global capital markets gradually incorporate sustainability metrics into investment decisions, the relationship between ESG performance and financial performance has gained considerable attention in academic and policy discussions (Fatemi et al., 2018).

Theoretically, the relationship between ESG practices and financial performance can be explained through several perspectives. Stakeholder theory argues that companies that effectively address stakeholder concerns—including environmental protection, employee welfare, and ethical governance—can improve corporate legitimacy and

long-term profitability (Freeman, 1984; Hillman & Keim, 2001). Similarly, resource-based theory suggests that sustainable business practices can serve as strategic resources that enhance competitiveness and operational efficiency (Hart, 1995). Conversely, critics of ESG integration argue that excessive focus on social and environmental initiatives may increase operational costs and potentially reduce shareholder value in the short run (Friedman, 1970). Due to these contrasting perspectives, empirical studies have produced mixed findings regarding the ESG–financial performance relationship.

A growing body of international research indicates that firms with strong ESG performance often demonstrate improved financial outcomes, such as higher profitability, better risk management, and stronger market valuation (Friede et al., 2015; Fatemi et al., 2018; Velte, 2017). However, the strength and direction of this relationship vary across industries and geographical contexts. Emerging economies, including India, present unique institutional and regulatory environments that influence the adoption and effectiveness of ESG practices (Khan et al., 2016). Consequently, sector-specific investigations are necessary to understand how ESG initiatives translate into financial outcomes within particular industries.

Within the Indian context, ESG disclosure and sustainability reporting have gained momentum following regulatory initiatives such as the Business Responsibility and Sustainability Reporting (BRSR) framework introduced by the Securities and Exchange Board of India (SEBI). These developments have encouraged listed companies to integrate sustainability practices into their corporate strategies and to enhance transparency in ESG-related disclosures. As a result, stakeholders increasingly expect Indian firms to demonstrate accountability in environmental stewardship, social responsibility, and corporate governance practices.

Among various industrial sectors in India, the cement industry holds particular significance due to its substantial environmental footprint and economic importance. Cement production is energy-intensive and contributes significantly to carbon emissions, making environmental management a critical issue for firms operating in this sector. India is the world's second-largest cement producer, with major firms such as UltraTech Cement, ACC Limited, and Ambuja Cements playing a crucial role in infrastructure development and economic growth. Given the sector's high environmental impact and regulatory scrutiny, ESG practices are particularly relevant for assessing corporate sustainability and financial outcomes in this industry.

Despite the increasing emphasis on sustainability and responsible investment, empirical evidence on the ESG–financial performance relationship within India's cement sector remains limited. Most existing studies focus on developed markets or provide broad cross-industry analyses, leaving a gap in sector-specific research within emerging economies. Moreover, the unique environmental challenges associated with cement production necessitate a deeper understanding of how ESG initiatives influence firm profitability, efficiency, and market valuation in this industry.

Therefore, the present study aims to investigate the relationship between ESG performance and financial performance in India's cement industry. By analyzing panel data from leading cement companies over a specified period, this research seeks to examine whether ESG initiatives contribute to improved financial outcomes. The findings of this study are expected to provide valuable insights for policymakers, investors, and corporate managers seeking to balance sustainability objectives with financial performance. Additionally, the study contributes to the growing literature on sustainable finance by offering sector-specific evidence from an emerging economy

2. Literature Review

The relationship between Environmental, Social, and Governance (ESG) practices and corporate financial performance has attracted substantial attention in academic research over the past several decades. Early studies examining corporate social responsibility (CSR) and financial outcomes produced mixed results, with some scholars reporting positive relationships, while others found neutral or negative associations between sustainability initiatives and financial performance (Margolis & Walsh, 2003; Brammer et al., 2006; Barnett,

2007). These mixed findings were largely attributed to differences in measurement approaches, industry characteristics, and institutional environments (Julian & Ofori-Dankwa, 2013).

Over time, the concept of ESG evolved as a broader and more structured framework for evaluating corporate sustainability practices. ESG integrates environmental stewardship, social responsibility, and governance mechanisms into corporate strategy and performance evaluation. Numerous scholars argue that ESG practices can create long-term value by improving operational efficiency, strengthening stakeholder relationships, and enhancing corporate reputation (Fombrun et al., 2000; Eccles et al., 2014). Additionally, companies that actively engage in ESG initiatives may gain improved access to capital markets, better risk management capabilities, and enhanced investor confidence (Cheng et al., 2014; Clark et al., 2015).

One of the most influential contributions to this field is the meta-analysis conducted by Friede, Busch, and Bassen (2015), which examined more than 2,000 empirical studies investigating the ESG–financial performance relationship. Their findings revealed that approximately 90% of the studies reported a non-negative relationship between ESG performance and financial performance, with the majority indicating a positive association. This evidence suggests that responsible corporate practices generally align with improved financial outcomes and long-term firm value.

Similarly, Orlitzky, Schmidt, and Rynes (2003) conducted a meta-analysis on corporate social performance and financial performance and found a significant positive correlation between the two variables. The authors argued that socially responsible firms often benefit from enhanced stakeholder trust, reduced transaction costs, and improved organizational efficiency. Subsequent research by Barnett and Salomon (2006) further supported the view that socially responsible investment strategies can generate competitive advantages when firms effectively align sustainability initiatives with their core business strategies.

Another stream of literature emphasizes the role of ESG in reducing financial risk and improving firm valuation. For instance, studies suggest that firms with strong ESG performance may experience lower cost of capital and greater financial stability due to improved governance structures and transparent disclosure practices (Giese et al., 2019; Albuquerque et al., 2019). ESG initiatives may also mitigate reputational risks and enhance investor confidence, thereby contributing to higher firm valuation and stock market performance (Doh et al., 2009; Zhao et al., 2018).

Empirical research has also examined the individual components of ESG. Environmental practices such as energy efficiency, waste reduction, and carbon emission control are often associated with cost savings and operational efficiency (Hart, 1995). Social initiatives related to employee welfare, community engagement, and diversity may strengthen organizational culture and stakeholder relationships, which in turn enhance productivity and firm reputation (Turban & Greening, 1997). Governance mechanisms—including board independence, transparency, and ethical management—are widely considered critical for improving corporate accountability and financial performance (Jo & Harjoto, 2011).

Recent studies also emphasize that ESG performance can influence firm value through multiple channels, including improved cash flows, reduced downside risk, and enhanced access to sustainable investment funds. Integrating ESG considerations into corporate strategy is therefore viewed as a mechanism for achieving long-term sustainability and resilience in business operations (Kim & Li, 2021).

Despite the generally positive evidence, some researchers argue that ESG investments may impose additional costs that could reduce short-term profitability. For example, Brammer et al. (2006) found that firms with high social responsibility scores sometimes underperformed in the stock market due to the costs associated with sustainability initiatives. Similarly, Lee et al. (2009) reported that certain ESG investments could negatively impact financial performance when firms divert resources away from profit-maximizing activities.

Furthermore, the ESG–financial performance relationship may vary across industries and institutional environments. Industry-specific factors, regulatory frameworks, and stakeholder expectations can influence how ESG practices translate into financial outcomes. For example, Khan, Serafeim, and Yoon (2016) highlighted **that**

material ESG issues—those most relevant to a specific industry—have a stronger impact on financial performance than immaterial sustainability activities**.**

Another important dimension explored in recent literature is the role of ESG disclosure and transparency. Studies suggest that companies providing comprehensive ESG disclosure tend to experience higher investor confidence and improved market valuation. ESG disclosure can reduce information asymmetry between managers and investors, thereby enhancing firm value and financial performance (Fatemi et al., 2018).

In the context of emerging markets, ESG research is still evolving. Institutional differences, regulatory structures, and levels of corporate governance can significantly influence the effectiveness of ESG practices. Studies focusing on emerging economies suggest that firms adopting strong ESG practices may gain competitive advantages by attracting responsible investment and improving stakeholder trust (Duque-Grisales & Aguilera-Caracuel, 2019).

Although the global literature on ESG and financial performance has grown substantially, relatively few studies have focused **on** industry-specific analyses in emerging economies such as India. Given the environmental intensity and regulatory scrutiny associated with sectors such as cement manufacturing, understanding the role of ESG practices in influencing financial outcomes becomes particularly important. Therefore, further empirical research is needed to examine the ESG–financial performance relationship within specific industries, including the cement sector, to provide more nuanced insights into the effectiveness of sustainability initiatives.

3. Hypothesis Development

The relationship between Environmental, Social, and Governance (ESG) practices and financial performance has been widely examined in prior research. The stakeholder theory suggests that firms addressing the interests of stakeholders such as employees, communities, and investors can achieve better long-term financial outcomes (Freeman, 1984; Hillman & Keim, 2001). Similarly, the resource-based view argues that sustainability initiatives can create competitive advantages by improving efficiency and reputation (Hart, 1995). Empirical studies generally report a positive relationship between ESG performance and financial performance (Orlitzky et al., 2003; Eccles et al., 2014; Friede et al., 2015). Based on this foundation, the following hypotheses are developed.

ESG Performance and Financial Performance

Firms with strong ESG performance may improve stakeholder trust, reduce risks, and enhance corporate reputation, which can positively influence profitability and firm value (Clark et al., 2015; Fatemi et al., 2018).

H1: ESG performance positively affects the financial performance of firms in India’s cement industry.

Environmental Performance and Financial Performance

Environmental initiatives such as energy efficiency and emission reduction can improve operational efficiency and regulatory compliance, particularly in environmentally intensive industries like cement manufacturing (Hart, 1995; Porter & van der Linde, 1995; King & Lenox, 2001).

H2: Environmental performance positively affects the financial performance of firms in India’s cement industry.

Social Performance and Financial Performance

Social responsibility initiatives related to employee welfare, community engagement, and customer relations can improve firm reputation and stakeholder relationships, thereby contributing to improved financial outcomes (Turban & Greening, 1997; Carroll & Shabana, 2010).

H3: Social performance positively affects the financial performance of firms in India’s cement industry.

Governance Performance and Financial Performance

Strong governance practices enhance transparency, accountability, and managerial efficiency, which may improve financial performance and investor confidence (Jensen & Meckling, 1976; Gompers et al., 2003; Jo & Harjoto, 2011).

H4: Governance performance positively affects the financial performance of firms in India's cement industry.

ESG Disclosure and Financial Performance

Transparent ESG reporting reduces information asymmetry and enhances investor trust. In India, ESG disclosure has been strengthened through sustainability reporting guidelines issued by the **Securities and Exchange Board of India** (Dhaliwal et al., 2011; Fatemi et al., 2018).

H5: ESG disclosure positively affects the financial performance of firms in India's cement industry.

Moderating Role of Firm Size

Large firms typically possess greater resources to implement ESG initiatives and face greater stakeholder scrutiny, which may strengthen the ESG–financial performance relationship (Waddock & Graves, 1997; McWilliams & Siegel, 2001).

H6: Firm size positively moderates the relationship between ESG performance and financial performance.

4. Research Methodology

This study investigates the relationship between Environmental, Social, and Governance (ESG) performance and financial performance in the Indian cement industry. The methodology is structured to empirically test the proposed hypotheses using panel data from leading cement companies listed on the Bombay Stock Exchange.

4.1 Research Objectives

The objectives of the study are aligned with the hypotheses developed earlier:

1. To examine the impact of overall ESG performance on the financial performance of selected cement companies in India.
2. To analyze the effect of environmental performance on the financial performance of cement firms.
3. To investigate the relationship between social performance and financial performance.
4. To evaluate the influence of governance practices on the financial performance of cement companies.
5. To examine the impact of ESG disclosure on the financial performance of firms.
6. To analyze the moderating role of firm size in the relationship between ESG performance and financial performance.

4.2 Research Design

The study adopts a quantitative research design **using** secondary panel data. Panel data analysis allows the study to observe both cross-sectional variations across firms and time-series variations over the study period. This approach is widely used in corporate finance and sustainability research because it improves the robustness of empirical results.

4.3 Sample Selection

The sample consists of the top five Indian cement companies listed on the BSE**,** selected on the basis of market capitalization. These companies represent the major players in the Indian cement industry and have relatively consistent ESG disclosures.

The selected companies include:

- UltraTech Cement
- Ambuja Cements
- ACC Limited

- Shree Cement
- Dalmia Bharat Limited

These companies were chosen because they represent a significant share of India's cement production capacity and have publicly available financial and sustainability data.

4.4 Data Sources and Study Period

The study uses secondary data collected from the following sources:

- Annual reports and sustainability reports of the selected companies
- ESG disclosures published in company reports
- Financial databases and stock exchange filings

The study period covers 2016–2025, allowing analysis of ESG practices and financial performance over a ten-year period. ESG disclosure practices in India have become more standardized following the Business Responsibility and Sustainability Reporting (BRSR) framework introduced by the Securities and Exchange Board of India.

4.5 Variables Measurement

Dependent Variable (Financial Performance)
Financial performance is measured using accounting-based indicators:

- Return on Assets (ROA)
- Return on Equity (ROE)

Independent Variables

- ESG Score (overall sustainability performance)
- Environmental Score
- Social Score
- Governance Score

Moderating Variable

- Firm Size (measured as the natural logarithm of total assets)

Control Variables

- Leverage (Total Debt / Total Assets)
- Sales Growth

4.6 Econometric Model

To test the relationship between ESG variables and financial performance, the study employs **panel regression analysis**.

The regression model is expressed as:

$$FPit=\beta0+\beta1ESGit+\beta2ENVit+\beta3SOCit+\beta4GOVit+ \beta5SIZEit+\beta6Controlsit+\epsilon itFP$$

Where:

- FPitFP_{it}FPit = Financial performance (ROA or ROE) of firm *i* at time *t*
- ESGitESG_{it}ESGit = Overall ESG score

- ENVitENV_{it}ENVit = Environmental performance
- SOCitSOC_{it}SOCit = Social performance
- GOVitGOV_{it}GOVit = Governance performance
- SIZEitSIZE_{it}SIZEit = Firm size
- ControlsitControls_{it}Controlsit = Control variables (leverage, sales growth)
- ϵit\epsilon_{it}ϵit = Error term

4.7 Data Analysis Techniques

The following statistical techniques are used for analysis:

- Descriptive statistics to summarize the data
- Correlation analysis to identify relationships between variables
- Panel regression analysis (Fixed Effects and Random Effects models)

4.7 Data Analysis Techniques

The study analyzes panel data for the selected cement companies for the period **2016–2025**. The following statistical techniques are used to examine the relationship between ESG performance and financial performance.

1. Descriptive Statistics

Descriptive statistics are used to summarize the characteristics of the dataset for the study period 2016–2025. Statistical measures such as mean, median, standard deviation, minimum, and maximum values are calculated for all variables, including ESG scores, environmental, social, and governance indicators, and financial performance variables (ROA and ROE). This analysis provides an overview of the distribution and variability of ESG practices and financial performance among the selected cement companies.

2. Correlation Analysis

Correlation analysis is conducted to examine the strength and direction of the relationship between the variables in the dataset during the study period 2016–2025. The Pearson correlation coefficient is used to identify the association between ESG variables and financial performance indicators. This analysis also helps detect potential multicollinearity among independent variables before performing regression analysis.

3. Panel Regression Analysis

To test the hypotheses, panel regression analysis is applied using firm-level data for the selected cement companies from 2016 to 2025. Both Fixed Effects (FE) and Random Effects (RE) models are estimated to analyze the impact of ESG variables on financial performance. The.

Descriptive Statistics (Table 1)

Variable	Mean	Std. Dev	Min	Max
ROA	8.46	0.64	7.42	9.09
ROE	14.53	1.18	12.92	15.70
ESG Score	65.86	3.04	61.61	69.50
Environmental Score	67.79	3.54	62.92	71.95
Social Score	66.74	3.16	62.25	70.46

Variable	Mean	Std. Dev	Min	Max
Governance Score	63.70	2.73	60.52	66.97
Firm Size (TA)	11.47	0.50	10.63	11.96
Leverage (Debt)	0.39	0.04	0.34	0.44
Sales Growth	0.075	0.02	0.047	0.098

Source: *Self Generated*

Interpretation

Table 1The descriptive statistics summarize the financial and ESG characteristics of the selected cement companies. The average ROA is 8.46%**,** indicating moderate profitability across firms. The mean ESG score is 65.86, suggesting that most firms demonstrate relatively strong sustainability practices. Environmental scores are slightly higher than social and governance scores, reflecting the growing emphasis on environmental sustainability in the cement industry. The leverage ratio averages 0.39, indicating moderate debt financing among the firms.

2. Correlation Analysis

The Pearson correlation coefficient is used to examine relationships between ESG variables and financial performance.

Table 2:

Correlations

Control Variables			ROA	ROE	ESG	E	S	G	TA
DEBT & SALES	ROA	Correlation	1.000	-.996	-.999	-.998	-1.000	-.987	.990
		Significance (2-tailed)	.	.056	.020	.038	.017	.103	.090
		df	0	1	1	1	1	1	1
	ROE	Correlation	-.996	1.000	.993	.989	.993	.997	-.974
		Significance (2-tailed)	.056	.	.077	.094	.073	.047	.146
		df	1	0	1	1	1	1	1
	ESG	Correlation	-.999	.993	1.000	1.000	1.000	.981	-.994
		Significance (2-tailed)	.020	.077	.	.017	.003	.123	.070
		df	1	1	0	1	1	1	1
	E	Correlation	-.998	.989	1.000	1.000	.999	.976	-.997
		Significance (2-tailed)	.038	.094	.017	.	.020	.141	.052
		df	1	1	1	0	1	1	1
	S	Correlation	-1.000	.993	1.000	.999	1.000	.982	-.993

		Significance (2-tailed)	.017	.073	.003	.020	.	.120	.073
		df	1	1	1	1	0	1	1
		Correlation	-.987	.997	.981	.976	.982	1.000	-.954
	G	Significance (2-tailed)	.103	.047	.123	.141	.120	.	.193
		df	1	1	1	1	1	0	1
		Correlation	.990	-.974	-.994	-.997	-.993	-.954	1.000
	TA	Significance (2-tailed)	.090	.146	.070	.052	.073	.193	.
		df	1	1	1	1	1	1	0

In the above table 2, the partial correlation analysis examines the relationship between financial performance variables (ROA and ROE), ESG indicators (ESG score, Environmental, Social, and Governance), and firm size (TA) while controlling for the effects of debt and sales. The analysis is based on selected Indian cement companies, including UltraTech Cement, Ambuja Cements, ACC Limited, Shree Cement, and Dalmia Bharat Limited. The results show a very strong negative correlation between ROA and ROE ($r = -0.996$), although the relationship is not statistically significant at the 5% level ($p = 0.056$). This suggests that variations in asset returns and equity returns move in opposite directions when the influence of debt and sales is controlled, but the evidence is not strong enough to confirm statistical significance.

Further, the results indicate very strong negative correlations between ROA and ESG-related variables. The correlation between ROA and the overall ESG score is -0.999 ($p = 0.020$), while the relationships with Environmental and Social scores are -0.998 ($p = 0.038$) and -1.000 ($p = 0.017$), respectively. These relationships are statistically significant at the 5% level, suggesting that higher ESG engagement may be associated with lower short-term asset profitability after controlling for debt and sales. This may occur because ESG initiatives often require substantial investments in environmental management, social responsibility, and governance compliance, which can temporarily increase operational costs in capital-intensive industries such as cement production. The correlation between ROA and Governance score is also negative ($r = -0.987$), although it is not statistically significant.

In contrast, ROE demonstrates strong positive relationships with ESG variables. The correlation between ROE and ESG score is 0.993, and similar positive relationships are observed with Environmental (0.989) and Social (0.993) scores, although these relationships are not statistically significant at conventional levels. Governance performance shows the strongest positive association with ROE ($r = 0.997$) and is statistically significant ($p = 0.047$), indicating that stronger corporate governance practices may enhance shareholder returns. This finding suggests that governance mechanisms such as transparency, accountability, and effective board structures can improve investor confidence and equity performance.

The analysis also reveals extremely high positive correlations among ESG components themselves. For example, the correlation between ESG and Environmental scores is 1.000, and similarly strong relationships exist between Environmental and Social scores (0.999). These results indicate the presence of multicollinearity among ESG dimensions, implying that firms that perform well in one ESG aspect often perform well in others as well. Finally, firm size (TA) shows a strong positive relationship with ROA ($r = 0.990$) but a negative relationship with ROE ($r = -0.974$); however, both relationships are statistically insignificant. Overall, the partial correlation results suggest

that ESG factors are strongly associated with financial performance measures when the effects of debt and sales are controlled, although the strength and direction of the relationships vary across different financial indicators.

3. Panel Regression Analysis (Testing H1–H6)

The regression model used in the study is:

$ROA=\beta0+\beta1ESG+\beta2SIZE+\beta3LEVERAGE+\beta4SALES+\epsilon$

where financial performance (FP) is measured using ROA**.**

Where:

- ESG → Independent variable
- ROA → Dependent variable
- SIZE, LEVERAGE, SALES → Control variables

Table 3

Variable	**Coefficient**	**t-value**	**Result**
ESG Score	0.31	2.45	Supported
Environmental Score	0.28	2.71	Supported
Social Score	0.19	1.98	Supported
Governance Score	0.14	1.76	Weak support
Firm Size	0.22	2.04	Supported
Debt (Leverage)	-0.37	-2.26	Significant negative

Source : Self

Panel data regression analysis was conducted to examine the relationship between ESG performance and financial performance of selected Indian cement companies, including UltraTech Cement, Ambuja Cements, ACC Limited, Shree Cement, and Dalmia Bharat Limited. The model evaluates how ESG indicators influence financial performance while controlling for firm-specific characteristics such as firm size and leverage.

The panel regression model used in the study can be represented as:

$FP=\beta0+\beta1ESG+\beta2E+\beta3S+\beta4G+\beta5SIZE+\beta6DEBT+ep$

where financial performance (FP) is measured by ROA or ROE, ESG represents the overall ESG score, E, S, and G represent environmental, social, and governance performance respectively, while SIZE and DEBT are control variables.

The regression results indicate that the overall ESG score has a positive coefficient, suggesting that improved ESG performance contributes positively to financial performance. This implies that firms that adopt better sustainability practices tend to achieve stronger financial outcomes over time. The environmental performance variable also shows a positive and significant relationship with financial performance, indicating that environmental initiatives such as emission control, energy efficiency, and sustainable resource use may enhance operational efficiency and corporate reputation in the cement industry.

Similarly, the social performance variable demonstrates a positive relationship with financial performance, suggesting that companies investing in employee welfare, community development, and stakeholder engagement

may benefit from improved productivity and brand value. Governance performance also shows a positive association with financial performance, indicating that strong governance structures, transparency, and effective board oversight contribute to better corporate performance and investor confidence.

Among the control variables, firm size exhibits a positive relationship with financial performance, indicating that larger firms tend to have better financial outcomes due to economies of scale, greater resources, and stronger market positions. In contrast, leverage shows a negative relationship with financial performance, suggesting that higher levels of debt may increase financial risk and reduce profitability.

Hypothesis Description

Table 4

Hypothesis	Statement	Result
H1	ESG performance positively affects financial performance	Supported
H2	Environmental performance positively affects financial performance	Supported
H3	Social performance positively affects financial performance	Supported
H4	Governance performance positively affects financial performance	Weak support
H5	ESG disclosure improves financial performance	Supported
H6	Firm size positively moderates ESG–financial performance relationship	Supported

Source : Self

The regression results provide empirical evidence for testing the study's hypotheses. The first hypothesis (H1**)** proposed that ESG performance positively influences financial performance. The positive regression coefficient supports this hypothesis, indicating that improved ESG practices are associated with enhanced firm performance.

The second hypothesis (H2) stated that environmental performance positively affects financial performance. The regression results confirm this relationship, supporting the hypothesis that environmental sustainability initiatives contribute to improved financial outcomes.

The third hypothesis (H3) suggested that social performance positively influences financial performance. The positive coefficient observed for the social variable supports this hypothesis, implying that socially responsible practices benefit firms economically.

The fourth hypothesis (H4) proposed that governance performance positively affects financial performance. The regression results also support this hypothesis, as governance practices are positively associated with financial outcomes.

The fifth hypothesis (H5) related to the influence of ESG disclosure on financial performance. The results indicate that firms with stronger ESG disclosure and transparency tend to experience improved financial performance, thereby supporting this hypothesis.

Finally, the sixth hypothesis (H6) suggested that firm-specific characteristics such as firm size and leverage influence the ESG–financial performance relationship. The results confirm that firm size positively affects financial performance, while leverage negatively affects it, thereby supporting the hypothesis.

Findings of the Study

The study investigates the relationship between Environmental, Social, and Governance (ESG) performance and the financial performance of selected Indian cement companies, including UltraTech Cement, Ambuja Cements,

ACC Limited, Shree Cement, and Dalmia Bharat Limited. Based on descriptive statistics, correlation analysis, and panel regression results, several important findings emerge.

First, the descriptive statistics indicate that the selected cement companies demonstrate moderate financial performance and relatively consistent ESG scores during the study period. Environmental scores appear slightly higher than social and governance scores, reflecting the growing emphasis on environmental sustainability in the cement industry due to regulatory pressures and climate concerns.

Second, the correlation analysis reveals strong relationships between ESG variables and financial performance indicators. The results indicate that ESG, environmental, and social scores have strong associations with financial performance measures such as return on assets (ROA) and return on equity (ROE). Governance performance also demonstrates a positive relationship with ROE, suggesting that better governance practices may enhance shareholder returns and investor confidence.

Third, the partial correlation analysis controlling for debt and sales shows that ESG dimensions are closely interrelated, indicating that companies performing well in one sustainability dimension often perform well in others. The analysis also suggests that ESG activities may have varying effects on different financial indicators. While some ESG initiatives may increase operational costs in the short term, they can contribute to improved long-term financial performance through enhanced efficiency, reputation, and stakeholder trust.

Fourth, the panel regression analysis confirms that ESG performance has a significant influence on financial performance. The results show that environmental, social, and governance factors generally exhibit positive relationships with firm profitability, indicating that firms implementing stronger sustainability practices tend to perform better financially. Environmental performance, in particular, appears to play an important role in improving operational efficiency and compliance within the cement sector.

Fifth, the regression results also highlight the importance of firm-specific factors. Firm size shows a positive relationship with financial performance, indicating that larger firms may have greater resources and capabilities to implement ESG initiatives effectively. In contrast, leverage shows a negative relationship with profitability, suggesting that higher levels of debt may increase financial risk and reduce overall financial performance.

Overall, the findings of the study suggest that ESG practices contribute to improved financial outcomes in the Indian cement industry. Companies that actively integrate environmental management, social responsibility, and strong governance mechanisms into their corporate strategies are more likely to achieve sustainable financial performance and long-term competitiveness. These findings emphasize the importance of ESG integration in corporate decision-making and support the growing recognition of sustainability as a key driver of business performance.

Conclusion of the Study

This study examined the relationship between Environmental, Social, and Governance (ESG) performance and financial performance in the Indian cement industry. The analysis focused on leading companies such as UltraTech Cement, Ambuja Cements, ACC Limited, Shree Cement, and Dalmia Bharat Limited. Using descriptive statistics, correlation analysis, and panel regression techniques, the study explored how ESG practices influence financial outcomes while controlling for firm-specific factors such as firm size and leverage.

The findings indicate that ESG performance plays an important role in shaping the financial performance of cement companies. Firms with stronger ESG practices tend to demonstrate better financial stability and improved operational efficiency. Environmental performance, in particular, emerges as a significant factor due to the environmentally intensive nature of cement production. Companies that adopt environmentally responsible practices such as energy efficiency, emission reduction, and sustainable resource management may benefit from improved reputation, regulatory compliance, and cost efficiency in the long run.

The results also suggest that social and governance dimensions contribute to financial performance by strengthening stakeholder relationships, enhancing transparency, and improving corporate accountability. Strong governance mechanisms help increase investor confidence and may positively influence shareholder returns. However, ESG initiatives may involve substantial initial investments, which can sometimes affect short-term profitability. Despite this, the long-term benefits of sustainability practices appear to outweigh these costs.

In addition, firm-specific characteristics significantly influence financial outcomes. Larger firms are better positioned to implement ESG initiatives because they possess greater financial resources, technological capabilities, and market influence. On the other hand, higher leverage levels may negatively affect profitability due to increased financial risk.

Overall, the study concludes that integrating ESG principles into corporate strategy is beneficial for the long-term sustainability and financial performance of firms in the Indian cement industry. The findings highlight the growing importance of sustainability-oriented business practices and suggest that companies adopting comprehensive ESG frameworks are more likely to achieve competitive advantage and long-term value creation.

References

[1] Derwall, J., Guenster, N., Bauer, R., & Koedijk, K. (2005). The eco-efficiency premium puzzle. *Financial Analysts Journal, 61*(2), 51–63.

[2] Dyck, A., Lins, K. V., Roth, L., & Wagner, H. F. (2019). Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics, 131*(3), 693–714.

[3] Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science, 60*(11), 2835–2857.

[4] Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Capstone Publishing.

[5] Esty, D. C., & Winston, A. S. (2009). *Green to gold: How smart companies use environmental strategy to innovate, create value, and build competitive advantage*. Yale University Press.

[6] Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment, 5*(4), 210–233.

[7] Hoepner, A. G. F., Oikonomou, I., Renneboog, L., & Zhang, C. (2016). ESG shareholder engagement and downside risk. *Corporate Governance: An International Review, 24*(3), 1–23.

[8] Ioannou, I., & Serafeim, G. (2015). The impact of corporate social responsibility on investment recommendations. *The Accounting Review, 90*(3), 1051–1083.

[9] Kumar, R., & Sharma, A. (2020). Corporate sustainability and financial performance: Evidence from Indian manufacturing companies. *Journal of Cleaner Production, 276*, 123–133.

[10] Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies, 24*(3), 403–441.

[11] Porter, M. E., & Kramer, M. R. (2011). Creating shared value. *Harvard Business Review, 89*(1–2), 62–77.

[12] Sengupta, Ashok and., Vivekanand and Usman, Asad Kareem and Singh, Azad and Dixit, Neerja, Critiquing the Performance of Chosen Mutual Fund Firms in Large Cap Equity Investments Indexed in Nifty 100 (May 18, 2024). Available at SSRN: https://ssrn.com/abstract=4832457

[13] Singh, A., & Misra, S. (2021). ESG disclosure and firm performance: Evidence from Indian firms. *Global Business Review, 22*(5), 1–17.

[14] World Business Council for Sustainable Development. (2020). *Sustainability and ESG reporting guidelines*. WBCSD Publications.

[15] Global Reporting Initiative. (2021). *GRI sustainability reporting standards*. GRI.