

Assessing the Influence of ESG Factors on Stock Prices: An Analysis of Nifty 50 Companies

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Abstract

This study examines the relationship between sustainability reporting, stock performance, and 'Environmental', 'Social', and 'Governance' (ESG) characteristics of Indian companies. The goal is to clarify the influence of environmentally conscious activities on enterprises. This research addresses the lack of knowledge regarding the impact of ESG ratings on stock performance in the Indian market, which has been overlooked in previous studies that mostly focused on the US and European markets. The study employs a quantitative methodology to gather stock prices and ESG ratings for companies in the Nifty 50 index. It then constructs portfolios that reflect the companies with the greatest and lowest ESG scores. The data is examined by OLS regression and Pearson correlation tests, indicating that ESG has a detrimental effect on stock prices in India. This suggests that enhancing ESG scores may not be advantageous for firms. Nevertheless, the study reveals disparities between companies with high and low ESG scores in relation to Sustainable Development Goals (SDGs), regulatory frameworks, anti-corruption initiatives, and ESG methodology. This presents opportunities for Indian businesses to improve their sustainable practices and generate value for stakeholders.

Keywords: Environmental, Social, Governance, ESG, Sustainability, SDGs

Introduction

In today's dynamic environment, characterised by challenges such as social issues, climate change, and

the ongoing global crisis encompassing energy prices, inflation, and interest rates, businesses face a VUCA (volatility, uncertainty, complexity, and ambiguity) landscape. The COVID-19 pandemic exemplified the need for rapid adaptation to new conditions. Stakeholders, including customers, policymakers, and investors, increasingly expect businesses to accept responsibility for their purchase decisions and value chains. The pandemic underscored the importance of resilience in business models and supply chains (Schwartzkopff, 2023). As organisational competencies must evolve to meet these challenges, strategic management and the values of leaders become crucial (Pardo, 2022). Consequently, sustainability in business has become a paramount consideration for companies and their operations.

India's economic growth is notable, with a GDP of \$2,256.6 trillion in 2021 and a predicted 7% increase in 2022, elevating it from the eleventh largest economy to the fifth largest globally in just a decade, surpassing the United Kingdom. Projections suggest that India's economy may surpass China's by 2027 (Armstrong, 2022). Verma (2023) estimates that 20% of India's workforce is already employed in green jobs, with this number expected to double by 2030. Green jobs include roles in waste management, energy, green infrastructure, sustainability management, ESG analysis, and environmental consulting. The demand for these roles in India has surged by 80–100% in the past year. Keywords like "environment" and "sustainability" are gaining traction as the market evolves. Investors increasingly value sustainable businesses and prefer to invest in companies that incorporate sustainability into their daily operations. Sustainable finance is becoming a crucial

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component of fundamental business in many countries around the world, encompassing subjects such as human rights, health, and climate. According to the 2018 Global Sustainable Investment Review, there was a 69% increase in ESG integration between 2016 and 2018.

Understanding ESG (Environmental, Social, and Governance) principles and incorporating them into organisational practices can strengthen a firm's brand value, reputation, and stakeholder trust. Adoption of ESG strategies has been shown to improve financial performance, reduce risks, and increase market value (Hamdi et al., 2022). Companies often use the Corporate Social Responsibility (CSR) framework to communicate their social and environmental initiatives to stakeholders. CSR initiatives may include reducing the carbon footprint, implementing fair employment practices, engaging in charitable giving, and supporting volunteer work for charities. While sustainability is measured using both CSR and ESG, ESG offers a quantitative assessment of these initiatives, whereas CSR is thought of as a qualitative valuation of a company's social responsibility. ESG programmes are now viewed as crucial elements of a company's value establishment and risk management strategy, unlike CSR, which was previously seen as a charitable tool with an emphasis on social benefits rather than financial gain (McKinsey & Company, 2023).

Despite India's high level of global competitiveness, there has been less research on the ESG performance of Indian corporations compared to CSR and environmental aspects. Additionally, the Indian government's measures to promote sustainable development, with a particular emphasis on ESG among listed firms, warrant further study.

ESG investing has gained prominence as investors seek to create portfolios that consider environmental, social, and governance factors alongside financial returns. ESG investing aims to assess the sustainability of companies by assigning them ESG ratings. Investors are increasingly applying ESG principles to their investment decisions due to the perceived alignment with their values, the observed better returns, and the belief that ESG companies are more considerate of people, the environment, and society. ESG investing also discourages investment in harmful ventures such as sex discrimination, war, and pollution.

The significance of sustainability in contemporary society is evident in the growing interest in sustainability, ESG, and their influence on financial performance. A substantial body of literature indicates a positive correlation between financial performance and business sustainability (Alshehhi et al., 2018). Verheyden et al. (2016); Xiang and Xiang (2019) have conducted research that demonstrates a positive correlation between financial performance and ESG. According to Hamdi et al. (2022), there can be a negative correlation between sustainability and financial performance, particularly in terms of generating income and disclosing CSR and ESG practices. Zhou R and Zhou D (2021) discovered that stakeholders in underdeveloped countries may not place as much importance on sustainability in their investment portfolios compared to stakeholders in wealthy countries, suggesting a less well-established approach to environmental, social, and governance (ESG) and corporate social responsibility (CSR). In contrast, Engelhardt et al. (2021) propose that in countries with lower levels of trust, the implementation of high-quality Corporate Social Responsibility (CSR) might have greater advantages. This is because it helps to decrease uncertainty and improve interactions with stakeholders.

Literature Review

Graves and Waddock (1997) presented the theory of good management, which suggests that improved performance in Corporate Social Performance (CSP) aspects leads to better financial outcomes, emphasising the importance of socially responsible practices in achieving financial success. Stead and Stead (2008) further expanded on this idea with the concept of Sustainable Strategic Management, highlighting the role of strategic managers in creating competitive advantages through sustainable practices.

Popa and Burlea (2013) discussed the Legitimacy Theory, which describes how companies shift towards socially and environmentally conscious cultures to fulfil social obligations, resulting in positive organisational outcomes. Similarly, Stead and Stead (2014) introduced the Triple Bottom Line concept, advocating for a balance between profit-making and social and environmental responsibility for achieving sustainability.

Jain and Winner (2016) conducted a study on CSR and sustainability in India, identifying opportunities for improvement in how businesses communicate their CSR and sustainability efforts, aligning with global trends of increased societal and environmental involvement. Verheyden et al. (2016) 'investigated the influence of ESG ratings' on volatility and stock price, suggesting that ESG information can offer valuable insights into a company's future performance.

Alshehhi et al. (2018) found that 78% of the publications they analysed showed a positive correlation between financial performance and sustainability. This supports the notion that implementing sustainable practices might result in better financial results. Wijethilake et al. (2018) emphasised the significance of stakeholder theory in environmental strategy, underscoring the favourable influence of effectively managed stakeholder interactions on sustainable business practices.

Kumar and Prakash (2019) discussed the value of sustainability reporting, showing that stakeholders value sustainability and CSR reports as evidence of an organisation's commitment to sustainable practices. Deng X (2019) and Chang et al. (2022) explored the effect of 'ESG' scores on 'stock price and volatility', suggesting that higher ESG scores can benefit companies in various ways.

Although there is an increasing interest in environmental, social, and governance (ESG) factors and sustainability, there is a dearth of research on the relationship between firm sustainability and financial performance in developing countries (Alshehhi et al., 2018). The lack of study in this area emphasises the significance of assessing Indian companies based on their sustainability and ESG (Environmental, Social, and Governance) scores. Furthermore, Sharma et al. (2020) proposed that additional investigation is required to explore the correlation between environmental, social, and governance (ESG) factors and the financial performance of Indian companies. This research aims to investigate the relationship between ESG scores, volatility, and share price growth among Nifty 50 firms in India, considering India's position as an

emerging market. The study questions aim to examine the significance of the correlation between ESG ratings and Nifty 50 firms.

Research Methodology

The research methodology is defined as detached positivism, which involves the application of scientific procedures and critical realism. This methodology enables the impartial examination of data while recognising the impact of societal frameworks on the research procedure.

The population of data will be Nifty 50 companies and the study sample will be of all the Nifty 50 companies. Data ESG score and closing stock prices of the sample companies collected from 2017 to 2023 for the study. Quantitative data is collected from several sources, including Bloomberg, Prowess IQ, MSCI Ratings, CRICIL Ratings, and the NSE Stock Exchange website. MSCI Ratings, provided by Morgan Stanley Capital International, evaluates how well a business manages the risk and opportunities associated with ESG that have an impact on the bottom line. In order to determine which companies are leading and trailing the industry in terms of ESG risk disclosure and risk management relative to their peers, MSCI Ratings uses a rule-based methodology. This study employs Descriptive Statistics to provide a summary of the data, Pearson Correlation to examine the correlation between stock price and 'ESG scores', and Ordinary Least Square Linear Regression Analysis to further investigate this link. These statistical tools enable a comprehensive study of the data and offer insights into how ESG influences stock prices.

Data Analysis

Table 1 examines the portfolio of high ESG rated companies with a selected benchmark, the Nifty 50 index. The portfolio includes data on closing price, return, and ESG score, providing insights into the performance of 'firms with high ESG ratings' compared to the broader market represented by the benchmark.

Table 1: Descriptive Statistics of the Portfolio, Which Includes the Nifty 50 Index and Companies with High ESG Ratings

VARIABLE	OBS.	MEAN	STD.	MIN	MAX
High ESG Score Closing Prices	1462	1943.837	666.9711	857.095	3249.195
High ESG Score Returns	1461	0.000256	0.025664	-0.48789	0.148148
Nifty 50 Closing Prices	1462	14142.46	3318.309	7610.25	20192.35
ESG Closing Price	1462	231.0204	59.38296	119.63	332.32
Nifty 50 Returns	1461	0.000438	0.01159	-0.13904	0.084003
ESG Index Return	1461	0.00046	0.011678	-0.13609	0.082858

The portfolio of high ESG score companies exhibits a volatility of 2.57% and a mean return of 0.0265%. In contrast, the benchmark (Nifty 50 index) shows a volatility of 1.16% and a mean return of 0.04%. These statistics indicate that, on average, the Nifty 50 has a marginally higher return and lesser volatility associated with the 'portfolio of high ESG score' companies.

The higher return of the benchmark suggests that, over time, the Nifty 50 index outperforms the market comprised of 'companies with high ESG ratings'. Additionally, the lower volatility of the benchmark indicates that it experiences less fluctuation in returns compared to the portfolio.

Table 2 shows insights into the return, standard deviation, and ESG scores for a portfolio consisting of the ten businesses with the lowest overall ESG scores, as well as the benchmark Nifty 50 Index.

Firstly, the average return of the portfolio is 0.0096%, which is considerably lower than the average return of

the Nifty 50 Index, which is 0.0438%. These findings indicate that, on average, the portfolio with the lowest ESG scores has had worse returns in comparison to the Nifty 50 Index.

Furthermore, the portfolio's standard deviation is 1.16%, surpassing the standard deviation of the Nifty 50 Index, which stands at 2.82%. This suggests that the portfolio exhibits greater volatility in comparison to the index. Increased volatility is associated with increased risk, which can be linked to the poorer Environmental, Social, and Governance (ESG) scores of the companies in the portfolio.

The findings indicate that the portfolio with the lowest Environmental, Social, and Governance (ESG) scores has not only fared worse in terms of investment returns but also demonstrates greater instability when compared to the Nifty 50 Index. This suggests that organisations with low ESG ratings are more vulnerable to market fluctuations and may have a higher likelihood of performing worse than those with higher ESG scores.

Table 2: Descriptive Statistics of the Portfolio, Which Includes the Nifty 50 Index and Companies with Low ESG Ratings

VARIABLE	OBS.	MEAN	STD.	MIN	MAX
Low ESG Score Closing Prices	1462	3847.32712	1887.494	1342.14	8003.695
Low ESG Score Returns	1461	9.57777E-05	0.028158	-0.57616	0.120604
Nifty 50 Closing Prices	1462	14142.45663	3318.309	7610.25	20192.35
ESG Closing Price	1462	231.0203762	59.38296	119.63	332.32
Nifty 50 Returns	1461	0.00043819	0.01159	-0.13904	0.084003
ESG Index Return	1461	0.000460406	0.011678	-0.13609	0.082858

Table 3 displays the correlation coefficients, demonstrating the relationship's direction and strength. The 'portfolio with a high ESG score', as represented in Table 10, showed a significant positive correlation coefficient

for only four companies: Infosys, LTI Mindtree, Tech Mahindra, and Tata Consultancy Ltd. This suggests an extremely favourable relationship between the 'ESG ratings and the closing prices' of these companies.

The correlation coefficients for these four companies indicate a strong association between their ESG scores and stock prices, implying that as ESG scores increase, stock prices also tend to increase. This finding aligns with the notion that investors value firms with robust ESG practices, leading to higher stock prices.

In addition, two additional companies exhibited a positive correlation between their stock prices and ESG ratings, although the association was not as significant.

This suggests that although these companies may have advantages from their environmental, social, and governance (ESG) initiatives, the effect on stock prices may not be as significant as observed in the four previously listed corporations. The findings suggest a favourable correlation between ESG ratings and stock prices for certain companies in the portfolio. This emphasises the significance of environmental, social, and governance (ESG) practices in influencing the performance of stocks.

Table 3: 'Correlation of the Portfolio with High ESG Scores'

<i>High ESG Score Portfolio</i> (Closing Prices <--> ESG Rating)		<i>'Low ESG Score Portfolio'</i> (Closing Prices <--> ESG Rating)	
<i>Companies</i>	<i>Correlation</i>	<i>Companies</i>	<i>Correlation</i>
LTIMindtree ESG Rating	0.779	Bajaj Auto Ltd.	0.513
Infosys	0.706	Bajaj Finserv Ltd.	-0.308
Wipro	0.063	SBI Life Insurance Company Ltd.	0.901
IndusInd Bank Ltd.	-0.661	Titan Company Ltd.	-0.262
Tech Mahindra Ltd.	0.744	Eicher Motors Ltd.	-0.753
Tata Steel Ltd.	-0.539	Maruti Suzuki India Ltd.	0.139
UltraTech Cement Ltd.	-0.271	Sun Pharmaceutical Industries Ltd.	0.753
TCS Ltd.	0.775	Hindalco Ltd.	0.973
Reliance Industries Ltd.	-0.350		
Cipla Ltd.	0.565		
Average Closing Prices	-0.207	Average Closing Prices	0.070

The data analysis uncovers intriguing observations on the relationship between share prices and ESG ratings in the Low score ESG Portfolio. Out of the firms that were examined, only four demonstrate a substantial and favourable relationship (70% and above) between their stock prices and ESG rankings. The aforementioned firms are SBI Life Insurance, Sun Pharma, Titan, and Hindalco. This indicates that these firms have successfully mitigated their environmental, social, and governance (ESG) risks and capitalised on their ESG opportunities, resulting in a favourable influence on their stock prices.

In addition, Bajaj Auto and Maruti Suzuki India demonstrate a positive association between ESG ratings and share prices, albeit not as high as the four companies described earlier. This suggests that although some companies may be partially adopting ESG practices, the effect on their stock prices is not as significant as it is for the top-performing corporations.

In contrast, most businesses in the Low score ESG Portfolio have a detrimental correlation between

their ESG ratings and closing prices. Consequently, organisations with lower ESG ratings may encounter difficulties associated with ESG risks, potentially leading to a detrimental impact on their stock values. This emphasises the significance of proficiently overseeing environmental, social, and governance (ESG) elements to improve stock performance and reduce risks.

However, there is a negative link between the average ESG score of the companies and their ESG ratings, whereas there is a positive association between the average ESG score of the companies and their ESG ratings. Furthermore, there exists a weak positive correlation between the ESG ratings and the portfolio of companies with poor ratings.

The Table 4 results indicate that neither the Intercept nor the "Average ESG Score" variable is statistically significant at a conventional significance level of 5%.

The p-value for the Intercept is 0.36, which is above the threshold of 0.05. This indicates that the Intercept may not have statistical significance.

Similarly, the p-value for the “Average ESG Score” variable is 0.56, which is more than 0.05. This indicates that the variable may not have statistical significance.

The Intercept in the Low ESG Score Portfolio is 2486.021, with a substantial standard error of 7890.012. The p-value for the Intercept is 0.761, exceeding the threshold of 0.05. This suggests that the coefficient estimate is unlikely to deviate much from zero, indicating that the Intercept is

not statistically significant.

The coefficient for the variable “Average ESG Score” is 844.661, with a standard error of 4255.090. The coefficient’s t-statistic is 0.199, and its p-value is 0.848. Both values exceed the significance level of 0.05. This suggests that there may not be a statistically significant difference between the coefficient estimate and zero for the variable “Average ESG Score”.

Table 4: Regression Analysis

	High ESG Rating Portfolio				Low ESG Rating Portfolio			
	Coefficient	Standard Error	t-Stat	p-Value	Coefficient	Standard Error	t-Stat	p-Value
Intercept	5065.07	5218.30	0.97	0.36	2486.021	7890.012	0.315	0.761
Average ESG Score	-775.39	1289.42	-0.60	0.56	844.661	4255.090	0.199	0.848

Conclusion

The analysis demonstrated that the correlation between share price and ESG ratings is not significant, as supported by the analysis and comments. Although there is evidence suggesting a positive association between ESG ratings and share prices, only 4 out of 10 firms exhibit a strong positive correlation. The remaining 6 companies display either a negative or weak correlation. In general, there is a lack of significant correlation between ESG ratings and stock prices. Moreover, the study of t-values and p-values suggests that ESG ratings do not exert a statistically significant impact on stock prices. These findings suggest that additional factors may have a greater impact on deciding stock success in the Indian market.

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