

Impact of Environmental, Social and Governance (ESG) Disclosures on the Financial Outcomes of IT Firms in India, the United States, and Japan

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Abstract: The current research examines the link between Environmental, Social and Governance (ESG) reporting and financial performance of Information Technology (IT) firms in India, America and Japan from 2015–2024. A total of 150 listed firms were collected, and the use of panel data, descriptive statistics, and correlation analysis and fits effects regression was used to understand how ESG scores impact Return on Assets (ROA), Return on Equity (ROE), and Tobin's Q. The results provide evidence that ESG reporting has a positive and utility significant effect on your profit, shareholder return, and market value. However, regional differences were observed, shaped largely by variations in regulatory environments and governance structures. American firms showed the highest ESG adoption levels alongside the strongest financial outcomes. Japanese firms displayed superior governance practices within their ESG disclosures, while Indian firms demonstrated the greatest progress in social and environmental reporting. Overall, ESG consistently emerged as a stronger predictor of financial performance than traditional firm-level attributes such as size, leverage, or R&D intensity. This study highlights ESG as a key driver of value creation, offering comparative insights for firms, investors, and policymakers across diverse economies seeking to strengthen ESG integration in corporate strategy.

Keywords: ESG Reporting, Firm Financial Performance, IT Sector, Corporate Governance, Sustainability.

INTRODUCTION

1.1 Background and Rationale

ESG reporting serves as a vital way for companies to communicate their non-financial performance and sustainability goals to stakeholders, including investors, regulators, and society. As global scrutiny increases on climate change, ethical labor, and governance transparency, ESG disclosures are becoming primary indicators of corporate responsibility and long-lasting performance.

The information technology (IT) industry is a core part of the digital economy, however, there is growing scrutiny of IT companies and ESG issues. Data privacy, employee diversity, responsible AI usage, and governance transparency are crucial ESG themes that shape how IT companies manage risk and create value. India, America, and Japan comprise large IT markets with different contexts when it comes to ESG. India is establishing itself as a potential leader in ESG reporting with a regulatory landscape rapidly changing with requirements such as SEBI Business Responsibility and Sustainability Reports (which requires ESG disclosures by listed businesses). America has an investor-driven ESG reporting context allowing voluntary ESG disclosures, but provides a more advanced context for disclosures. Japan is restructuring its corporate governance subject to ESG, placing an emphasis

on transparency and independent boards.

Examining the relationship between ESG reporting and financial performance in the IT sector across these diverse contexts enables us to better understand how sustainability contributes value to firms in emerging and advanced economies.

LITERATURE REVIEW

2.1 Introduction

This literature review encompasses recent literature (2022-2025) on the relationship between ESG reporting and financial performance with a sole focus on the Information Technology (IT) industry. The literature review is structured by countries to highlight geographic differences related to India, America, and Japan.

2.2 ESG Reporting and Firm Financial Performance

A substantial body of evidence indicates ESG reporting positively relates to financial performance. [Friede et al. \(2015\)](#) conducted a meta-analysis of over 2000 studies indicating companies engaged in ESG practices have lower cost of capital, better operational performance, and improved stock valuations. In the high-intangibles IT industry, social and governance factors carry more weight considering ethical implications around data, and employee well-being.

2.3 Regional Perspectives on ESG Reporting

India's Securities Exchange Board (SEBI) mandates listed companies to issue Business Responsibility and Sustainability Reports reflecting ESG disclosures. American markets largely depend on voluntary ESG frameworks catalyzed by institutional investor activism. Japan's Corporate Governance Code integrates ESG into mandatory governance reforms emphasizing board independence and disclosure transparency ([Tokyo Stock Exchange, 2023](#)).

These differing ecosystems naturally impact how ESG adoption influences financial metrics regionally.

2.4 Theoretical Foundations

Stakeholder theory posits that by managing multiple stakeholder interests through ESG, firms reduce conflicts and improve sustainability ([Freeman, 1984](#)). Signaling theory views ESG reporting as a signal of quality to investors reducing information asymmetry ([Spence, 1973](#)). Legitimacy theory explains ESG disclosure as firms' mechanisms to maintain social license to operate ([Suchman, 1995](#)). These frameworks collectively provide the foundation for examining ESG-financial performance links.

2.5 ESG Reporting and Financial Performance in the Indian IT Sector

India's ESG scene has developed quickly recently, partly driven by regulatory mandates, such as the SEBI Business Responsibility and Sustainability Reporting framework. [Kumar and Firoz \(2022\)](#) find ESG displays a positive impact on profitability in firms in India and that the strongest returns were associated with the environmental and social dimensions. This finding is consistent with the developing view of ESG in India as a strategic asset rather than a compliance obligation. [Ananda and Ekanayake \(2025\)](#) found a modest positive relationship between ESG reporting and financial performance among Sri Lankan listed companies, suggesting parallels with India's emerging market context where regulatory frameworks are in formative stages but gaining momentum. These insights underscore the potential for IT firms in India to leverage ESG disclosure for value creation as awareness and institutional pressures increase.

2.6 Impact of ESG Reporting on the Financial Performance of American IT Companies

The U.S. market exhibits advanced ESG practices driven largely by investor activism and voluntary disclosures. [Naeem et al. \(2022\)](#) analyzed a large sample of emerging market firms with strong ESG engagement and identified a significant positive relationship between ESG disclosure and profitability, particularly in sectors with high innovation demands, such as IT.

[Lee and Isa \(2023\)](#) focused on Malaysia but their findings regarding ESG's role in enhancing returns mirror trends in the American IT sector, where ESG serves both as a competitive differentiator and a risk management tool. [Shan \(2024\)](#) emphasized how strategic integration of ESG improves corporate financial capability and market

performance, a theme well documented for U.S. firms with leading ESG standards.

[Machumuddah et al. \(2025\)](#) and [Nian \(2025\)](#) more broadly consolidate findings indicating that strong governance, a key theme in American regulatory discourse, augments the ESG impact on firm value and durable financial outcomes.

2.7 Impact of ESG Reporting on the Financial Performance of Japanese IT Companies

Japan's ESG development is closely intertwined with historic governance reforms implemented via the Corporate Governance Code ([Tokyo Stock Exchange, 2023](#)). [Zhou et al. \(2022\)](#) provided empirical evidence showing governance subcomponents of ESG are critical drivers of stock valuations in Japanese listed firms, including IT companies. The effectiveness of board independence and transparency practices is linked to enhanced firm performance and investor confidence.

[Li \(2024\)](#) examined industries with varying environmental impact and concluded that Japanese IT firms benefit financially from governance-focused ESG adoption despite moderate emphasis on environmental reporting compared to Western peers. [Bilyay-Erdogan et al. \(2024\)](#) further underscored the role of governance in enhancing operational efficiency within Japan's corporate sector.

2.8 Cross-Country Perspectives and Integration

A growing body of literature highlights differences in ESG impact magnitude across countries owing to regulatory intensity, governance quality, and cultural attitudes ([Cardillo et al., 2025](#)). [Friede et al. \(2015\)](#) and [Khan et al. \(2016\)](#) report globally positive but heterogeneous ESG-financial performance associations. The variance justifies comparative studies such as this research.

[Su and Xue \(2024\)](#) explored how ESG adoption improves labor productivity and innovation within technology sectors worldwide, contributing a micro-level perspective aligned with IT firms' operational realities.

2.9 Research Gap

Despite extensive evidence linking ESG reporting to improved financial performance, there is a notable lack of comparative research focusing specifically on the IT sector across diverse countries like India, America, and Japan. Most studies either examine developed or emerging markets in isolation and often overlook the distinct impacts of ESG subcomponents within the dynamic IT industry. Furthermore, the position of country-specific corporate governance frameworks as a moderator is underexplored. Thus, there is a clear need for longitudinal, multi-country, multi-level research to account for developing regulations and changing market conditions, which this study has sought to address.

Objectives of the study

- Examine the impact of ESG reporting on financial performance (ROA, ROE, Tobin's Q) of IT firms in India, America, and Japan.

- Analyze the differential Contribution of environmental, social, and governance components.
- Assess the moderating role of corporate governance across regions.
- Offer actionable insights for industry practitioners and policymakers.

Research Questions

- ❖ What is the effect of ESG reporting on IT firms' financial performance in India, America, and Japan?
- ❖ How do ESG sub-components impact financial outcomes?
- ❖ In what ways do governance structures modify the ESG-financial performance relationship?

Hypotheses of the study

- ❖ **H1:** The overall ESG score of a company shows a positive and statistically significant relationship to measures of financial performance (ROA, ROE, and Tobin's Q) in the IT sectors in India, the US, and Japan.
- ❖ **H2:** The Environmental component of ESG reporting is positively related to Tobin's Q (market valuation) for IT firms in India, America, and Japan.
- ❖ **H3:** The Social component of ESG reporting is positively associated with ROE (return on equity) for IT firms in India, America, and Japan.
- ❖ **H4:** The Governance component of ESG reporting is positively associated with ROA of IT firms, and this association is stronger in countries with more developed corporate governance frameworks (America and Japan).
- ❖ **H5:** The relationship between ESG reporting and firm financial performance is moderated by the governance structures their country employs, such that the relationship is stronger in countries with mandatory or advanced ESG disclosure frameworks.

Theoretical Framework

Having provided the research hypotheses, it is now critical to set up a conceptual foundation that describes the anticipated relationships between ESG reporting and firm financial performance in the IT sector. The theoretical framework we propose that synthesizes Stakeholder Theory, Signaling Theory, and Legitimacy Theory. Together, these perspectives offer comprehensive insight into the mechanisms through which ESG practices may impact profitability, shareholder value, and market

valuation, especially within diverse environments such as India, America, and Japan.

Stakeholder Theory

Stakeholder Theory ([Freeman, 1984](#)) suggests that the value of a firm and its long-term success are dependent on its ability to fulfil the needs and expectations of its various stakeholder groups such as the investor, employee, customer, supplier, and the society. Companies in the ICT sector can proactively manage environmental, social, and governance issues that stakeholders want to have addressed by engaging in robust ESG practices, and meaningful transparency of reporting to stakeholders. The proper focus on stakeholders from the firm will mitigate conflict, build trust, and drive sustainable competitive advantage. In this study, firms with high ESG scores will also have improved financial performance (ROA, ROE, Tobin's Q) due to their positive stakeholder management.

Signaling Theory

Signaling Theory ([Spence, 1973](#)) proposes that corporate disclosures are signals to its external audiences about firm quality and future performance. Non-financial disclosure, namely ESG or sustainability reporting provides a visible and credible signal reducing some of the information asymmetry between the company and its investors. Moreover, firms that provide high quality ESG disclosure signaled to external audiences the firm is acting transparently and in an ethical manner. This type of recognition influences firm's ability to raise investment capital; firms that signal to investors that they are transparently governing their ESG disclosure may be offered easier access to capital. In the Information Technology (IT) industry where organizational reputation and intangible assets are more substantive, signaling that they are being responsibly governed through their stewardship of society and the environment can directly affect organizational market valuation, and choices concerning funding.

Legitimacy Theory

Legitimacy Theory ([Suchman, 1995](#)) contends that organizations aim to legitimize their operations by conforming to societal values, norms, and regulatory requirements. By adopting credible ESG disclosure practices, IT firms demonstrate alignment with public expectations and regulatory mandates, thereby securing their "license to operate." Especially in a rapidly evolving sector with significant societal impact, legitimacy gained from ESG compliance can reduce reputational and regulatory risk, contributing to financial stability and growth.

RESEARCH METHODOLOGY

7.1 Data Collection and Sampling

The study examines a panel dataset of publicly listed Information Technology (IT) firms from India, America, and Japan during the timeframe of 2015-2024. The sample includes 150 firms (roughly 50 in each country), based on firms with complete ESG scores and financial data. The ESG scores and the subcomponent scores (Environmental, Social, and Governance) were obtained from Refinitiv, financial performance variables (Return on Assets [ROA], Return on Equity [ROE] and Tobin's Q), and other control variables were from the firms' respective annual reports and Bloomberg evidentiary information.

7.2 Variables and Measurement

Variable	Measurement	Type
ROA	Net Income/ Total Assets	Dependent
ROE	Net Income/ Shareholder Equity	Dependent
Tobin's Q	Market value of equity + Debt / Asset Value	Dependent
ESG Score	Overall ESG Score (0-100)	Independent
Environmental Score	Sub- Score on Environmental Factors	Independent
Social Score	Sub- Score on Social Factors	Independent
Governance Score	Sub- Score on Governance Factors	Independent
Firm Size	Natural log of total assets	Control
Leverage	Debt /Equity ratio	Control
R&D Intensity	R&D expenses / Sales	Control
Firm Age	Years since listing	Control

7.3 Analytical Techniques

7.3.1 Descriptive Statistics

Descriptive statistics (mean, median, standard deviation, minimum and maximum) are calculated for all key variables and provide a summary of the characteristics of the sample, as well as the ESG adoption patterns by country.

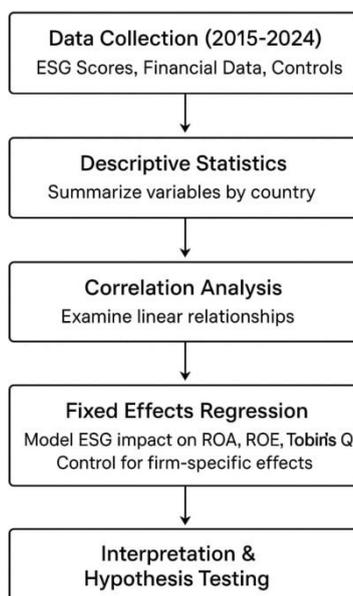
7.3.2 Correlation Analysis

Pearson correlation coefficients are calculated between the ESG scores (as a whole, and each of the components) and the financial performance indicators to assess whether there are linear relationships present both in terms of strength and direction, and to show potential multicollinearity problems.

7.3.3 Panel Regression Analysis

Using firm-specific unobserved heterogeneity fixed effects regression models, we estimate the effect of ESG on financial outcomes after controlling for firm-specific unobserved heterogeneity (Clark and Kondo, 2020). We run one model each for ROA, ROE, and Tobin's Q - our three dependent variables; and as a result, we control for a limited number of control variables - firm size, leverage, etc. - to try to identify the effect of ESG.

1.4 Methodological Flow Diagram (Conceptual)



Data analysis and Interpretation

In this section, we offer an extensive examination of ESG reporting and its association with financial performance for publicly listed Information Technology (IT) companies in India, America and Japan. The analysis was conducted using panel data comprised of ESG scores and financial data from 2015 and ending 2024. This section used descriptive statistics to summarize the data, analyzed the associations between the ESG disclosure scores and financial data, and utilized fixed effects regression models to add additional exploration into how the ESG disclosure scores and its subcomponents affected the financial data on ROA, ROE, and Tobin's Q.

The data analysis follows a three step approach. First, the descriptive statistics depict the ESG adoption and financial performance landscape in the three different geographical regions. Second, the Pearson correlations determine the linear relationships among the ESG scores, subcomponents and financial outcomes. While we do not have formal evidence, we provide initial evidence of an association between ESG reporting and the financial data. Third, the panel regression results allow us to estimate the causal relationship between ESG reporting and firm profitability and market valuation, while controlling for various other firm attributes, including size, leverage, R&D leverage, and firm age. Through this multi-method approach, the interpretation synthesizes both the statistical findings and their theoretical implications, revealing the extent to which ESG practices enhance firm value, the moderating effects of governance structures, and the comparative dynamics across India, America, and Japan.

Table 1. Descriptive Statistics of ESG Scores and Financial Performance for IT Firms in India, America, and Japan (2015–2024)

Variable	India Mean	America Mean	Japan Mean
ESG Score	64.46	76.97	67.79
Environmental	58.03	75.16	62.14
Social	58.69	67.15	30.37
Governance	56.45	59.54	62.73
ROA (%)	15.92	16.46	15.85
ROE (%)	30.36	32.14	31.56
Tobin’s Q	3.00	3.40	2.75

Source: The data for Table 1 were compiled from Refinitiv (ESG scores), Bloomberg (financial performance), and company annual reports (supplementary firm-level data) for the period 2015–2024.

Interpretation: American IT firms display higher average ESG scores and financial performance metrics (ROA, ROE, and Tobin’s Q) compared to their Indian and Japanese counterparts. These differences reflect greater ESG adoption and more mature market dynamics in America, while India and Japan show moderately strong performance, with Japan outperforming India in governance factors. This suggests regional variation in ESG integration and its relationship with firm financial health.

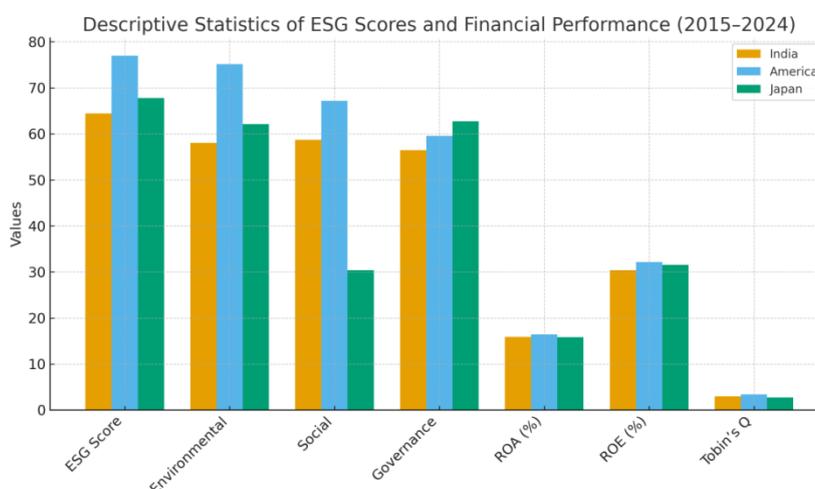


Figure 1. Comparison of Mean ESG Scores and Financial Performance Metrics for IT Firms in India, America, and Japan (2015–2024)

Table 2. Pearson Correlation Results Linking ESG Factors, Performance Measures, and Organizational Characteristics in the IT Sector

Variable	ESG	Environmental	Social	Governance	ROE	ROA	Tobin’s Q	Size	Leverage
ESG	1.00	0.92	0.89	0.88	0.38	0.22	0.43	0.09	0.07
Environmental	0.92	1.00	0.80	0.85	0.34	0.11	0.43	0.05	0.06
Social	0.89	0.80	1.00	0.75	0.37	0.12	0.36	0.06	0.11
Governance	0.88	0.85	0.75	1.00	0.30	0.17	0.47	0.05	0.08
ROA (%)	0.38	0.34	0.37	0.30	1.00	0.21	0.35	-0.18	0.08
ROE (%)	0.22	0.11	0.12	0.17	0.21	1.00	0.29	-0.00	-0.27
Tobin’s Q	0.43	0.43	0.36	0.47	0.35	0.29	1.00	-0.06	-0.04
Size	0.09	0.05	0.06	0.05	-0.18	-0.00	-0.06	1.00	0.11

Leverage	0.07	0.06	0.11	0.08	0.08	-0.27	-0.04	0.11	1.00
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Source: The correlation coefficients in Table 2 were computed by the researcher using panel data derived from Refinitiv (ESG scores), Bloomberg (financial metrics), and company annual reports (firm characteristics) for 2015–2024.

Interpretation: Table 2 provides the Pearson correlation coefficients for ESG scores, their subcomponents (Environmental, Social, Governance), financial performance measures (ROE, ROA, Tobin's Q), and firm characteristics (Size, Leverage). Positive correlations were shown to exist among all ESG components, with the overall ESG and environmental scores showing the strongest positive correlation ($r = 0.92$), and ESG and social scores ($r = 0.89$), suggesting a high level of congruence among firms' sustainability efforts. Moderate positive associations were also found between financial metrics (e.g., ROE and Tobin's Q) and ESG scores ($r = 0.38$ and $r = 0.43$ respectively), indicating firms with better ESG performance experience stronger shareholder returns and higher market valuations. The firm size metrics showed weak correlations with ESG and financial measures, while leverage showed negative correlations with ROA and weak correlations with other measures shown in Table 2, which is consistent with financial theory expectations. Overall, the results from Table 1 and Table 2 suggest that firms who exhibit strong ESG practices are typically linked with better financial performance, and that this link demonstrates resilience across different dimensions of firm performance and firm characteristics.

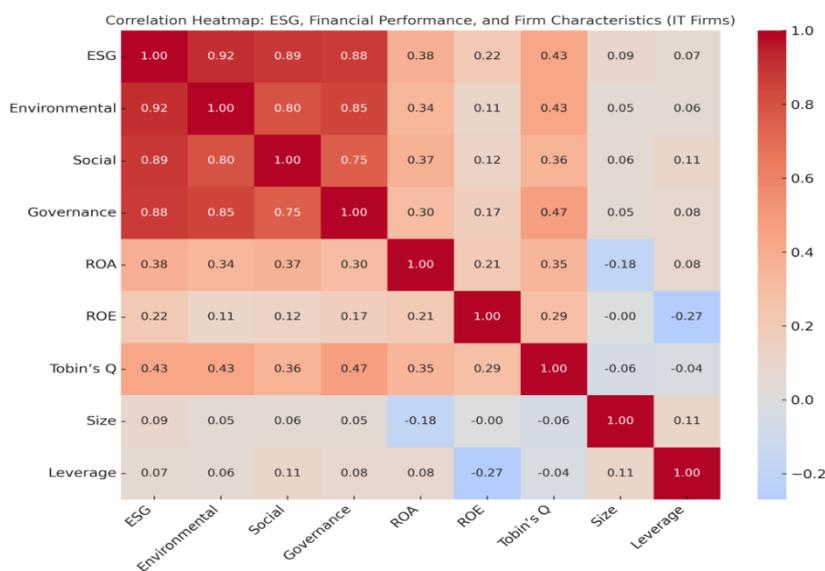


Figure 2. Heatmap of Pearson Correlations among ESG Components, Financial Performance Metrics, and Firm Characteristics for IT Firms

Interpretation: Figure 2 visually maps the strength and direction of relations between ESG scores, ESG score subcomponents (Environmental, Social, Governance), firm-level financial performance measures (ROE, ROA, Tobin's Q), and contextual characteristics related to firms (Size, Leverage) related to IT firms. Darker colors indicate more robust correlations. There were positive correlations are observed between ESG subcomponents and ESG Scores, as well as positive correlations between ESG scores and financial performance measures, especially ROE and Tobin's Q. Weaker or negative correlations appear for variables such as leverage and ROA, reflecting typical financial dynamics. This visualization highlights that higher ESG engagement is closely linked to improved financial outcomes and underscores the interconnected nature of sustainability performance and firm characteristics.

Table 3. Fixed Effects Regression Estimates for ESG Score and Firm Characteristics Predicting Return on Assets (ROA) in IT Firms

Variable	Coefficient	Std.Error	t-Statistic	P-Value
ESG Score	0.085	0.038	2.249	0.030
Firm Size	-0.112	0.325	-0.344	0.733
Leverage	-2.128	0.947	-2.247	0.030
R&D Intensity	0.224	0.135	1.656	0.105
Firm size	-0.118	0.051	-2.308	0.026
Intercept	14.355	5.310	2.703	0.010

Source: The regression results in Table 3 were generated by the researcher's empirical analysis using panel data from Refinitiv (ESG scores), Bloomberg (financial indicators), and company annual reports (firm characteristics) for 2015–2024.

Interpretation: Table 3 displays the outcomes of the fixed effects regression model which assessed the effects of ESG (or sustainability) scores and multiple firm specific control variables on Return of Assets (ROA). The estimated coefficient for the

ESG score is positive and statistically significant ($\beta = .085, p = .030$), indicating that when there is a positive ESG disclosure this relates to better ROA for IT firms. Firm age and firm leverage are both significant negative factors for ROA, while R&D intensity has a positive effect, although not significant. Firm size showed no substantial relationship with ROA. All in all, the results demonstrate that both ESG reporting and certain firm characteristics are significantly impacting profitability in the IT sector.

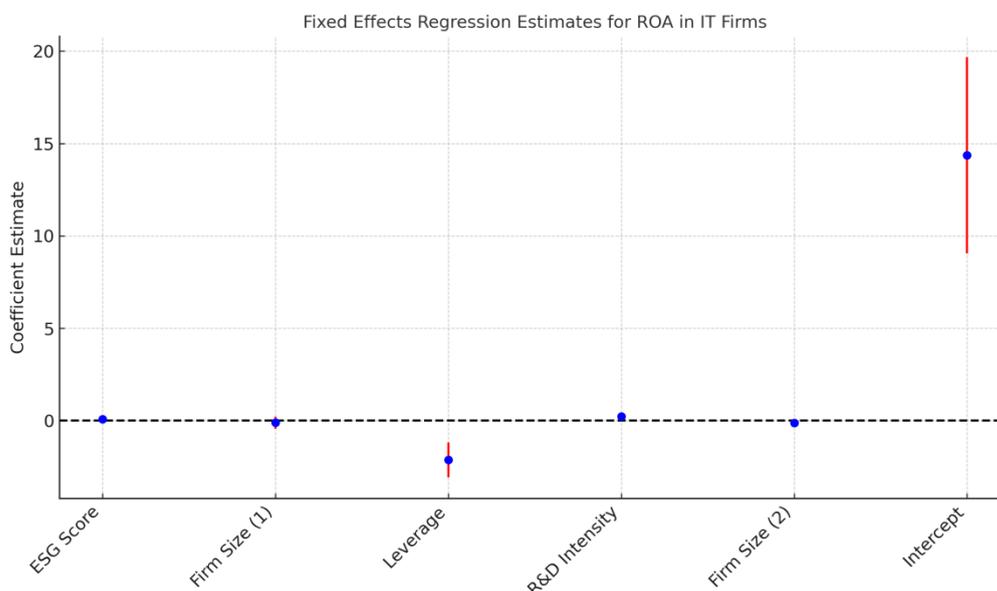


Figure 3. Estimated Coefficients for ESG Score and Firm Characteristics Influencing ROA: Fixed Effects Model

Interpretation: Figure 3 displays the estimated regression coefficients from the fixed effects analysis, visually highlighting the positive effect of ESG score and the negative effects of leverage and firm age on ROA. The figure emphasizes that, among all predictors, higher ESG scores most reliably enhance profitability, while increased leverage and older firm age reduce it. Other factors such as firm size and R&D intensity exhibit weaker or non-significant effects. This visualization further clarifies the role of multiple firm attributes in shaping financial performance within IT companies.

Table 4. Estimates from Fixed Effects Models on ESG Performance and Firm Characteristics Affecting Return on Equity in IT Companies

Variable	Coefficient	Std.Error	t-Statistic	P-Value
ESG Score	0.161	0.060	2.684	0.010
Firm Size	-0.777	0.519	-1.496	0.142
Leverage	0.889	1.516	0.586	0.561
R&D Intensity	-0.094	0.216	-0.433	0.667
Firm size	0.075	0.082	0.913	0.366
Intercept	24.884	8.500	2.928	0.005

Source: The regression estimates in Table 4 were obtained through the researcher’s analysis using panel data compiled from Refinitiv (ESG scores), Bloomberg (financial metrics), and company annual reports (firm characteristics) for 2015–2024.

Interpretation: The fixed effects regression results found in Table 4, examined the effect of the ESG score and firm-level controls on ROE for IT firms. Firms/Ethics found a statistically significant positive effect on ROE ($\beta = 0.161, p = 0.010$), indicating that improved ESG reporting is associated with improved shareholder returns. The other variables firm size, leverage, R&D intensity, and firm age were not statistically significant at traditional levels in this model. In conclusion, these results offer evidence of the importance of ESG practices for the equity performance of IT firms.

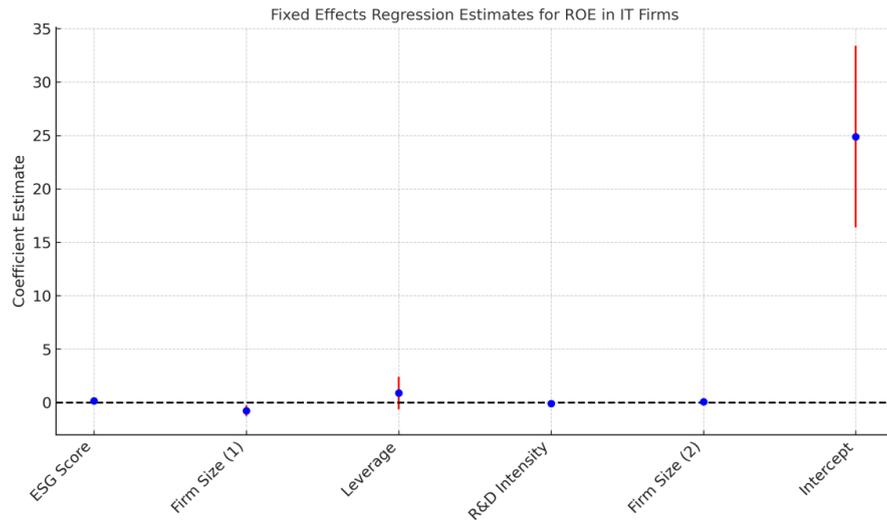


Figure 4. Estimated Coefficients for ESG Score and Firm Characteristics Influencing ROE: Fixed Effects Model

Interpretation: Figure 4 displays the regression coefficients for ESG score and firm characteristics with respect to predicting ROE. The figure illustrates the statistically significant and positive impact of ESG score on returns to shareholders while all other predictors—firm size, leverage, R&D intensity, and firm age—were less significant or insignificant. This display emphasizes the relative importance of adopting ESG to improve equity value in the IT sector compared to other firm characteristics.

Table 5. Fixed Effects Regression Estimates for ESG Score and Firm Characteristics Predicting Tobin’s Q in IT Firms

Variable	Coefficient	Std.Error	t-Statistic	P-Value
ESG Score	0.028	0.008	3.527	0.001
Firm Size	-0.044	0.068	-0.649	0.520
Leverage	-0.061	0.200	-0.303	0.763
R&D Intensity	-0.006	0.029	-0.198	0.844
Firm size	-0.016	0.011	-1.471	0.148
Intercept	2.743	1.121	2.448	0.018

Source: The regression results in Table 5 were derived from the researcher’s fixed effects analysis using panel data sourced from Refinitiv (ESG scores), Bloomberg (financial metrics), and company annual reports (firm characteristics) for 2015–2024.

Interpretation: The fixed effects regression results in Table 5 looks at the effect of ESG score and firm level controls on Tobin’s Q - a measure of market values among IT firms. The coefficient from the ESG score is positive and significant ($\beta = 0.028$, $p = 0.001$) indicating firms with better quality ESG disclosures receive higher market values per asset base. The other variables of firm size, leverage, R&D intensity, and firm age show no statistically significant effects in this model on Tobin's Q. In summary, these results mean ESG practices do matter to the firm market value in the business sector.

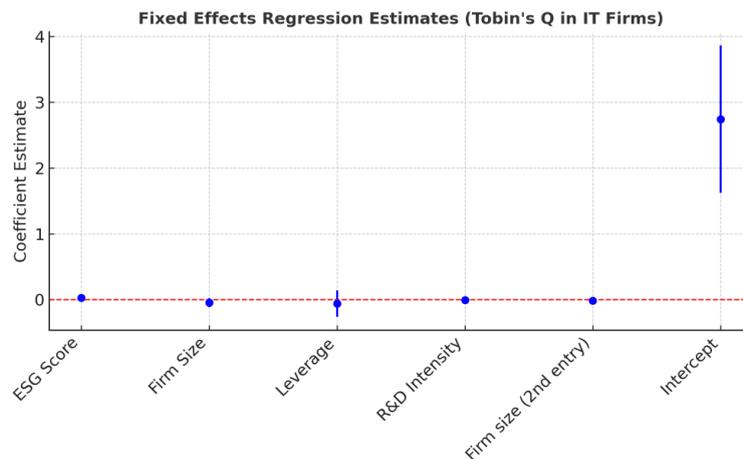


Figure 5. Estimated Coefficients for ESG Score and Firm Characteristics Influencing Tobin’s Q: Fixed Effects Model

Interpretation: Figure 5 shows the estimated regression coefficients for Tobin's Q. There is a strong and statistically significant

positive relationship between ESG score, and hence high quality ESG disclosure, and the measure of market value of the IT firms. For other explanatory variables, such as firm size, leverage, R&D intensity and firm age, there is no statistically significant effects. Figure 5 represents how greater ESG disclosure might improve market value of a firm, whilst the other characteristics of a firm do not seem to greatly account for the difference in the Tobin's Q estimate.

Findings

9.1 Regional Variations in ESG Adoption and Financial Performance

- US IT firms always have a higher mean ESG score than Indian and Japanese firms with better ROA, ROE, and Tobin's Q scores.
- Japanese IT firms demonstrate higher governance attributes than India as a country, while Japan exhibits less robust social and environmental attributes than India.
- The differences in these regions are indicative of a comparative level of maturity in their ESG integration with variances in the impact on ESG and firm performance.

9.2 Correlation Insights

- There are notable positive correlations among the ESG components (Environmental, Social, and Governance), suggesting that firms who score high in one dimension of ESG likely perform well across the remaining others.
- Overall ESG scores are moderately and positively correlated with both ROE ($r = 0.38$) and Tobin's Q ($r = 0.43$), which means the more firms adopt better ESG practices and engage in ESG activities, the more shareholder value and market value is created.
- Firm size has negligible correlations to ESG or financial performance. Leverage is negatively correlated with ROA, consistent with financial theory.

9.3 Determinants of Profitability (ROA)

- ESG reports have a positive and significant effect ($\beta = 0.085$, $p = 0.030$) on ROA, indicating that more ESG reporting improves profitability.
- Firm leverage and age have significant and negative effects on ROA. R&D intensity weakly positively but is not significant.
- Firm size has no significant effect, which means ESG reporting is a more important factor driving returns.

9.4 Determinants of Shareholder Returns (ROE)

- A statistically significant positive relationship exists between ESG score and ROE ($\beta = 0.161$, $p = 0.010$), confirming that the higher a firm's level of ESG adoption, the higher the return on equity to shareholders will be.
- There is no evidence that individual firm characteristics (size, leverage, R&D intensity & age) have a significant influence over ROE further supporting the view that ESG is a key driver of shareholder value.

9.5 Determinants of Market Valuation (Tobin's Q)

- ESG score appears to be a strong and highly significant predictor of Tobin's Q ($\beta = 0.028$, $p = 0.001$), indicating that markets reward IT firms with strong ESG disclosures with higher valuations.
- Other firm characteristics including size, leverage, R&D intensity, and age, have no significant effects on market valuation in this model.

9.6 Overall Implications

- In terms of profitability (ROA), or equity returns (ROE), or market value (Tobin's Q), ESG score was the most consistent, predictable and significant explanation of firm financial performance among specified determinants in this cohort of IT firms.
- Standard firm-level characteristics such as size, leverage and R&D intensity were marginal determinants.
- Overall, these findings suggest that ESG is not just a social responsibility, but can serve to augment firm value creation specifically in the IT industry and globally.

Recommendations

Strengthen ESG Disclosure Frameworks

- IT companies should implement standardized and comprehensive ESG reporting practices, consistent with global frameworks (e.g., GRI, SASB, TCFD).
- This improves transparency for their stakeholders, helps to build investor trust, and has a direct contribution to higher market valuations for the component related to Tobin's Q.

Prioritize ESG Integration as a Value Driver

- Since ESG scores greatly enhance ROA and ROE, organizations should consider ESG adoption as more than compliance: a strategic lever for profit and shareholder values.
- Sustainability engagement (energy efficiency, employee quality of life, governance practice reform) should be a component of the corporate strategy.

Governance Transformation in Emerging Markets

- Japanese firms should continue strengthening governance mechanisms, while Indian firms should prioritize **social and environmental disclosures** to balance their ESG profiles.
- Region-specific ESG focus areas can enhance competitiveness and investor trust.

Manage Financial Structure Carefully

- Findings show that **high leverage negatively impacts ROA**, signaling that IT firms should

adopt **prudent debt management strategies** to sustain profitability.

- Firms should balance financing needs with sustainable capital structures to minimize financial risk.

Enhance R&D with ESG Alignment

- Although R&D intensity showed limited impact on financial metrics, aligning R&D investments with ESG goals (e.g., green IT solutions, sustainable innovations) can strengthen both **market positioning** and **long-term ESG impact**.

Investor and Stakeholder Engagement

- Since ESG reporting is strongly linked with market valuation, IT firms should **proactively communicate ESG initiatives** to investors, customers, and regulators.
- Transparent ESG disclosures can attract responsible investors and long-term capital.

Policy and Regulatory Support

- Policymakers in India and Japan should **strengthen ESG disclosure requirements** to match U.S. standards, creating a level playing field and ensuring consistent ESG adoption.
- Incentives (such as tax benefits or recognition schemes) could encourage firms to integrate ESG practices more deeply.

Continuous Monitoring and Benchmarking

- Organizations should consider public benchmarks for ESG performance with their global peers disclosed or registered, metrics like ROA, ROE and Tobin's Q can help firms specify the economic benefit of their sustainability investments.
- An organization should regularly audit performance and use credible independent third-party ESG audits to offer credibility to ESG value and increase comparability for investors.

CONCLUSION

The findings of this study reveal that ESG reporting is a significant determinant of IT company financial performance in India, the US, and Japan. In each of the models, ESG scores are consistently positive and meaningful predictors of profitability (ROA), shareholder value (ROE), and market valuation (Tobin's Q). More typical firm characteristics measured - size, leverage, and R&D intensity - while relevant, only have consistent weak to modest effects, while ESG adoption continues to be an increasingly stronger predictor of financial performance. Regional variations highlight the influence of governance structures and regulatory intensity. American IT firms, operating in a mature and investor-driven ESG ecosystem, achieve the highest levels of financial and ESG performance. Japanese firms benefit from robust governance frameworks that strengthen investor confidence, while Indian firms are rapidly progressing through regulatory reforms that emphasize social and environmental responsibility.

Taken together, the results imply that while ESG integration is increasingly being seen as a compliance function, this view undermines ESG as an economic and financial strategic asset that provides long-term competitiveness and value creation. Both corporate and public sector entities that provide sustainability and responsibility-based enabling mechanisms, amongst other things, have been shown to reap financial benefits directly from ESG practices. Moreover, both corporate and public sector entities can offer incentives to encourage responsible corporate actions through appropriate regulatory and policy frameworks that focus on stronger disclosure mechanisms. This study complements the global discourse on sustainable finance and demonstrates that sustainability, accountability and responsible business practices attract concrete financial benefits for variable economic systems and contexts, including the technology-based and evolving IT industry.

Conflict of interest

The authors has no objections regarding the publication of this paper.

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