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Original Article

Assessing the Impact of ESG Performance on Financial Outcomes and Firm Valuation: Sector-Wise Evidence from US Markets

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Abstract - *In previous studies, ESG scores have been seen to influence profitability and market performance. The objective of the study is to evaluate the effects of ESG on Return On Assets (ROA) and market capitalization in three different US sectors in the S&P 500. Panel data from more than 300 companies across the financial, healthcare, and IT sectors, spanning 2015 to 2023, were used. The research framework employed Feasible Generalized Least Squares (FGLS) and a range of tests to detect and correct for multicollinearity, Autocorrelation, and heteroskedasticity. The results indicated that, in the finance sector, out of the three ESG scores, only the governance score has a significant and positive impact on ROA. On the contrary, market capitalization is substantially influenced by the environment score and governance score in the finance sector. Moreover, a direct impact of environment and governance score on market valuation exists. In the healthcare sector, all the individual ESG scores were significant. In the IT sector, only the governance score was significant. These results can be used to help other researchers and help with policy implications with respected companies. Hence, the study demonstrated that ESGs have a significant impact on firms.*

Keywords - *ESG, Return-on-Assets (ROA), Market Capitalization, Finance, Healthcare, Information Technology.*

1. Introduction

1.1. General Background

ESG Environmental, Social, and Governance metrics have been used to evaluate a company's sustainable and ethical practices. Each measure pertains to issues related to the environment, government compliance, and social issues. The environmental score tracks a company's impact on its environment. It encompasses how well a company treats the environment. It includes specific things such as land use, carbon footprint, resource conservation, and waste byproducts [1]. The social score tracks a company's impact on people within and outside the company. It encompasses how the company treats people. It is calculated by considering consumer protections, supply chain management, and social vulnerability. The governance score tracks how well a company is managed. It encompasses company efficiency. It is found by considering ethics, pay ratios, and accounting practices. Companies like MSCI, Sustainalytics, and S&P Global ESG Scores are all key ESG rating agencies that use unique methodologies to calculate the ESG ratings [2,3,4]. ESG matrices help show how much companies comply with and obey regulations. For that reason, the use of ESG scores has become much more widespread over the last couple of decades. For example, ESG scores have become an indicator that investors use to identify companies with practices that align with their investment goals [5]. It also serves as a risk measurement sign, as it helps judge potential long-term risks that can impact performance [6]. There are nearly 8.4 trillion dollars worth of US assets under organizations that highly value ESG factors [7]. Along with that, the global value of assets related to sustainable investment is estimated to be around 41 trillion dollars. It is growing at a rapid rate, projected to exceed 53 trillion (around more than ⅓ of total assets under management) [8]. This shows that sustainable investment and ESG metrics are becoming more widespread and commonly used. ESG scores also have multiple impacts on specific fields like healthcare, Information Technology (IT), and finance. Specifically, Healthcare ESG practices, relating to patient safety and reasonable drug prices, build public trust and appeal to patients [9].

Along with that, they become more favorable to investors, have reduced regulatory risks, and may even lead to innovation and growth revolving around sustainable practices. ESG integration in the IT space can drive innovation in sustainable computing, appeal to top, newer talent who value ethics, and enhance brand image [10]. ESG

scores also play a large role in financial corporations. It helps financial firms determine and identify companies with strong, sustainable policies, as well as helps them assess a firm's risk [6].

Along with that, it helps investors target specific companies that align with a client's views. ESG data has seen a continuous rise in popularity and significance over the last few years, and for that reason, it is important to analyze this data point to evaluate the effect it could have on the economy. Beyond this, the ESG scores also have an impact on companies' financial and market performance.

1.2. Literature Review

Better ESG scores have been shown to have a direct relationship with financial performance. Overall, it improved financial performance, protected against downsides during the economic crisis, and had many more impacts. A wide variety of studies have shown that ESGs positively affect ROA. For example, a study conducted by Sang Kim and Zhichuan Li analyzed the correlation between the ESG factors and financial metrics in the United States [11]. The research focused on individual ESG categories (Environmental, Social, Governance) and their impact on profitability and financial risk variables. By performing and estimating the multivariate regression analyses, it was found that ESG scores seem to have a generally positive influence. Governance had the most significant relationship with firm performance, which was found to be positive. Social factors had a notable impact on credit ratings. Finally, environmental factors have a negative effect on credit ratings. Another study on similar lines studied the relationship between ESG information and the valuation of companies in the U.S.A. [12]. The study analyzed different channels, such as the idiosyncratic risk channel, the standard discounted cash flow, and the valuation channel. Morgan Stanley Capital International ESG Ratings were used. The findings of the research indicated that the higher the ESG score, the higher the profit and dividends. They also found that while classical factors only lasted months, ESG metrics lasted much longer. Moreover, companies with higher ESG ratings were also seen to manage risk better. Over the last few years, companies that have had high ESG scores have had fewer major stock crashes.

Similar studies showed similar results, mentioning how ESG disclosure aided Tobin's Q and the overall firm value. Some studies took into account variables like total assets, total debts, sales, cash and near-cash items, and capital expenditure and found that higher ESG values led to higher firm values as well. Similar results were found in a study conducted with respect to Germany [13]. Herein, it was aimed to study whether the ESG performance affects financial performance. Using the data from companies on the German Prime Standard, a regression and correlation analysis was conducted. The results indicated that the ESG metrics did not affect Tobin's Q (ratio of market valuation to book value) but positively impacted ROA (return on assets). ESG value has an impact on companies' market valuation. Better ESG scores result in more trust from investors and indicate better risk management practices. Moreover, it has been shown that the governance score has the strongest relative impact on the performance.

A different research approach was undertaken to investigate how ESG scores influenced monthly stock returns in Switzerland, the US, and the UK [14]. A five-factor linear market model was used to derive from Carhart's model to measure a stock's value change. The results eventually showed that ESG scores were a negative factor for the UK but not for the US or Switzerland. They found a low positive relationship between the ESG global score and market performance. They had found it nearly insignificant; a large sample size might be needed to find a more significant error. Though ESGs did have an impact, traditional financial factors have a much stronger impact. Specifically for the US S&P 500, the influence of ESG disclosure and the firm's operational and market performance were analyzed [15]. Data from 2009 - 2018 were used to estimate the panel regression to examine the hypothesis, and they selected 4869 observations from 505 firms. In the research, it was discovered that ESG disclosure improves performance. Specifically, performance in operations, finances, and the market. They discovered that the Environmental and Corporate Social score had a positive effect on Tobin's Q but an adverse effect on ROA and ROE. They also found that Corporate Governance disclosure was linked to ROA and Tobin's Q in a good way, but not to ROE. Another important discovery was that the level of disclosure for ESG, EVN, CSR, and CG correlated directly with ROA and ROE. Using similar regression analysis techniques, another study aimed to evaluate the impact of ESGs on UK firms[16]. The results found that it had an overall positive impact, finding that size moderates the effect of ESG performance. More specifically, ESG performance substantially positively affected both market value and Earnings Per Share (EPS). Economic, social, and governance all had a positive effect on EPS. However, environmental and corporate governance did not have major impacts on market value.

The data utilized for investigating the effect of ESG on firm value and the role of CEO power in the world included total assets, total debts, plant, equipment, net property, sales, cash and near-cash items, capital expenditure, Tobin's Q, ROA, and ESG data [17]. The results showed that companies with greater ESG values also had higher values. The scores for Environmental and Social also had a positive effect on the value of the company. Also, Tobin's Q increased by 17.87% when the standard deviation increased by 1 unit. They also found that ESG disclosure has a stronger effect in companies where the CEO has more power. Similarly, in a study done in Egypt, using both univariate and multivariate

analyses on a dataset of companies, it was seen that companies listed in the ESG index would also have a higher firm value, and firms with better ESG rankings also have a higher firm value. [18]. However, Amina Buallay, in their study, depicted that corporate disclosure positively impacts Tobin's Q but adversely affects ROA and ROE [19]. Social and governance disclosure introduced inefficiency that outweighs long-term benefits, hurting ROA and ROE. Lastly, from another perspective, the impact of getting ESG certification on a firm's value in Malaysia was explored [20]. A fixed panel regression model is used to examine how ESG affects components like Capital of Cost and Tobin's Q for 62 companies. The study shows that certification lowers a company's capital cost while Tobin's Q goes up. The findings suggest that ESG ratings help reduce financing costs. Moreover, firms also experience a 1.2% drop in capital costs. Therefore, ESG ratings help the firm's value, with the stock market rewarding ESG-rated firms with a 31.9% premium in Malaysia. Across many of the studies, the overall theme is that better ESG scores lead to better financial performance. Some studies even suggested that strong ESG scores can protect companies during an economic crisis. However, some studies have reported contrasting results on the effects of ESG on ROA.

1.3. Literature Gap and Rationale of the Study

Most of the previous papers focus on the effect of ESG disclosure on market performance and profitability. However, there is a lack of comparative studies between the various sectors. Most studies analyze the effects of ESGs on all companies in general without focusing on specific sectors. The industry or the sector of a firm is highly influential in determining the impact of ESG measures. Thus, this paper examines the link between each ESG score and market value and financial performance in three specific areas: the IT, healthcare, and financial sectors.

Additionally, when evaluating the effects of ESG, most studies focus on either financial profitability (such as ROA or ROE) or market valuation (like Tobin's Q or stock returns). Few studies investigate both aspects simultaneously and exclude ESG approaches that affect both internal financial performance and external investor perception across different industries. So, this study investigates how ESG practices affect profitability and valuation while being sector-specific. ESG metrics are important as they are used to evaluate a company's ethical practices. Over the last few years, ESG scores have become much more widespread. This ultimately reflects the push towards more sustainable investment. Researchers are seeking insight into this topic to find out if there is a link between ESG and specific company performance. Individuals are exploring whether large companies can keep up with better business practices. This study aimed to find out how ESG value affects the market and financial performance of certain large US sectors.

2. Methodology

2.1. Research Aim and Objectives

The study's primary aim is to analyze the relationship between ESG practices and the profitability and valuation of the firms. Moreover, a sector-wise comparison must be undertaken to show the industry-specific results. For the same reason, the broader aim is divided into the following objectives.

- Examining the impact of ESG performance on the financial profitability (measured by ROA) of the companies in the Financial, Healthcare, and IT sectors.
- Investigating the influence of ESG performance on the market valuation (measured by market capitalization) of the companies in the three selected sectors.
- Comparing the sectoral differences in how ESG factors influence both profitability and valuation, identifying whether ESG has a stronger effect in one sector than the others.

2.2. Research Hypotheses

The following research hypotheses are assumed in this study.

- "No significant impact of the environment score on ROA in the specified sectors"
- "No significant impact of the social score on ROA in the specified sectors"
- "No significant impact of the governance score on ROA in the specified sectors"
- "No significant impact of the environment score on market capitalization in the specified sectors"
- "No significant impact of the social score on market capitalization in the specified sectors"
- "No significant impact of the governance score on market capitalization in the specified sectors"

2.3. Data

This study aims to find the relationship between ESG metrics and profitability and market valuation. Panel data was used to measure various companies over many different years. The data of S&P 500 companies from 2015 to 2023 was sourced from Capital IQ. Specifically, the data was collected and analyzed for the IT, financial, and healthcare sectors. These sectors were selected based on the weightings of GICS sectors. The IT sector (29.63), financial sector (14.68), and healthcare sector (11.18) are the top 3 weighted sectors in GISC as of March 2025 [21]. The finance sector has 60 different companies, whereas the IT and healthcare sectors have 26 and 41 distinct companies, respectively. The cleaned and organized data is processed and analyzed using STATA 18 software.

2.4. Description of Variables

The dependent variables measured Market Capitalization and Return on Assets. The independent variables used were the individual ESG scores, Environmental, Social, and Governance scores.

2.4.1. Dependent Variables

- "Return on Assets (ROA) is a financial ratio that shows how profitable a company is relative to the total amount of assets it owns" [22]. ROA was used in this study because ROA indicates a firm's financial performance and the relationship with ESG values. Other metrics, like net profit and revenue, can be more easily affected by other extraneous factors like tax benefits. ROA, on the other hand, can be applied to any company regardless of industry and company size.
- "Market Capitalization (MKT_CAP) is the market value of a company's stock" [23]. Market Capitalization is used because it helps easily measure a company's value and correlate that with ESG metrics. Market Capitalization combines the stock price with the total number of shares, which gives a broad view of the company's value. It is also available for all public companies, making it easily accessible.

2.4.2. Independent Variables

"Environmental, Social, and Governance scores" are scores based on how a company impacts the environment, treats employees/society, and how it is held accountable [24]. This metric is found by measuring things such as carbon emissions, diversity and inclusion, and anti-corruption policies. The unit of measurement of ESG scores ranges from 0 to 100.

- Environment Score (ENV) - This score focuses on companies' direct impact on the environment [25]. For example, CO2 production and energy consumption are factors used to calculate this score.
- Social Score (SOC) focuses on the company's treatment and impact on individuals and society [26]. It includes things such as human rights, employee satisfaction, controversies, and more.
- Governance Score (GOV) - The Governance score in ESG reflects how well a company is managed, emphasizing ethical practices, board diversity, transparency, and accountability. It indicates the strength of leadership, oversight, and alignment with stakeholder interests [26].

2.4.3. Control Variables for the Model where ROA is the Dependent Variable

- Firm Size (SIZE): "Firm size represents the size and magnitude of the company" [27]. It helps identify what companies have access to better tools and capital. It is calculated as "the logarithm of the total assets value of the company".
- Debt Level (DEBT): "It is a measure of how much money a company owes to other institutions" [28]. Considering it as a control variable is important, as this metric indicates the company's risk level. It is estimated as follows:

$$Debt\ Level = Log(\frac{Total\ Liabilities}{Total\ Assets})$$

- Operating Leverage (OP_LEV): "It shows how much of its fixed costs a company has used". High operating leverage depicts how profit and other factors can be affected by sales changes [29]. The proxy to estimate operating leverage is as follows:

$$Operating\ leverage = Log(\frac{Fixed\ Assets}{Total\ Assets})$$

- Cash Flow (CFLOW): "Cash flow is the net amount of cash entering and exiting a company" [30]. Since cash flow shows investors how profitable a company is, it is necessary to consider it as a controlled variable in the ROA model. The unit here is dollars. It is calculated as follows:

$$Cash\ Flow = Log(\frac{Cash\ Holdings}{Total\ Assets})$$

- Firm Age (AGE): "Firm age is the number of years since the company's establishment" [31]. Older firms usually have higher reputations and more experience, which impacts the ROA of a firm. It is calculated as:

$$Firm\ Age = Log\ (current\ year - year\ of\ establishment + 1)$$

- Return on Equity (ROE): "ROE is an important financial ratio that indicates the amount of profit made from shareholders' equity" [32]. Higher ROE means more efficient use of equity and capital. ROE is estimated as:

$$ROE = Log(\frac{Net\ Income}{Shareholder's\ Equity})$$

2.4.4. Control Variables for the Model, where MKT_CAP is the Dependent Variable

- Net Income (N_INC): "Net Income (Dollars) is the money made by a company after expenses and taxes" [33]. It represents the total profit that the firm makes. It can be found by subtracting total expenses from a firm's total revenue.

- Asset Turnover (A_TURN): "Asset Turnover is the efficiency with which assets are used to make a profit" [34]. A higher ratio means the company uses its resources well to make sales. It is estimated using the following formula:

$$Asset\ Turnover = \frac{Income}{Total\ Assets}$$

- Cash Flow (CFLOW): As stated earlier, "cash flow tracks the amount of money entering and leaving the company" [35]. It is significant because it accounts for a firm's operational strength, making sure that the impact of other variables and factors on market capitalization is not biased or overstated.
- Price-to-Earnings Ratio (PE): "The Price-to-Earnings (P/E) Ratio indicates the amount that investors are willing to pay for every dollar of a company's profit" [36]. This ratio helps investors figure out how much a company or industry is worth compared to others. It is calculated by dividing the share price by the earnings per share.
- Price-to-Book Ratio (PB): "The Price-to-Book (P/B) Ratio shows a comparison between the market value and the book value (net assets) of a company" [37]. It is useful for valuing asset-heavy companies and hence, impacts market valuation. This ratio is found by "dividing the market price of a share by its book value".

2.5. Correlation Analysis

Correlation represents the relationship between variables [38]. It ranges from -1 to 1. It has been done to detect any possible multicollinearity and remove independent variables that were too highly correlated ($r > 0.8$). When variables are too correlated, it makes it difficult to identify each variable's specific effect. The financial performance model considered the following independent variables: "Environmental Score, Social Score, Government Score, Firm Size, Debt Level, Operating leverage, Cash Flow, Firm Age, and Return on Equity", while the market performance model used variables such as net income, asset turnover, cash flow, PE ratio, and PB ratio. The correlation tables show that the correlation between the independent variable values is less than 0.8. This indicates that there is no high correlation between any 2 independent variables in all the models. Hence, these variables can be considered within the models.

Table 1. Finance Sector: Correlation Matrix of Independent Variables (ROA as the regressand)

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
[1] ENV	1.000								
[2] SOC	0.114	1.000							
[3] GOV	0.381	0.048	1.000						
[4] SIZE	-0.007	0.309	0.059	1.000					
[5] DEBT	-0.016	0.055	-0.114	0.501	1.000				
[6] OP_LEV	0.255	-0.232	0.385	-0.643	-0.507	1.000			
[7] CFLOW	0.113	-0.201	0.114	-0.526	-0.251	0.569	1.000		
[8] AGE	0.209	0.328	0.220	0.402	0.265	-0.218	-0.016	1.000	
[9] ROE	0.089	-0.014	0.078	-0.023	-0.006	0.077	0.091	0.105	1.000

Table 2. Finance Sector: Correlation Matrix of Independent Variables (MKT_CAP as the regressand)

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
[1] ENV	1.000							
[2] SOC	0.149	1.000						
[3] GOV	0.405	0.029	1.000					
[4] N_INC	0.136	0.211	0.230	1.000				
[5] A_TURN	0.104	-0.238	0.235	-0.192	1.000			
[6] CFLOW	0.091	-0.175	0.133	0.065	0.716	1.000		
[7] PE	0.198	-0.272	0.148	-0.270	0.230	0.181	1.000	
[8] PB	0.197	-0.064	0.188	0.021	0.474	0.460	0.171	1.000

Table 3. Healthcare Sector: Correlation Matrix of Independent Variables (ROA as the regressand)

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
[1] ENV	1.000								
[2] SOC	0.153	1.000							
[3] GOV	0.148	0.236	1.000						
[4] SIZE	0.248	0.192	0.307	1.000					
[5] DEBT	-0.066	0.084	0.164	0.172	1.000				
[6] OP_LEV	-0.354	0.124	-0.068	-0.383	0.084	1.000			
[7] CFLOW	0.265	-0.259	-0.136	-0.458	-0.430	-0.159	1.000		
[8] AGE	-0.182	0.368	0.242	0.163	0.122	0.255	-0.377	1.000	
[9] ROE	0.029	0.150	-0.026	0.049	-0.014	-0.025	-0.030	0.055	1.000

Table 4. Healthcare Sector: Correlation Matrix of Independent Variables (MKT_CAP as the regressand)

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
[1] ENV	1.000							
[2] SOC	0.144	1.000						
[3] GOV	0.184	0.238	1.000					
[4] N_INC	0.265	0.158	0.231	1.000				
[5] A_TURN	-0.185	-0.052	-0.102	-0.096	1.000			
[6] CFLOW	0.236	-0.268	-0.146	-0.117	-0.099	1.000		
[7] PE	-0.167	-0.098	-0.065	-0.221	-0.080	0.219	1.000	
[8] PB	-0.118	0.128	-0.011	-0.107	0.203	-0.049	0.088	1.000

Table 5. IT Sector: Correlation Matrix of Independent Variables (ROA as the regressand)

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
[1] ENV	1.000								
[2] SOC	0.428	1.000							
[3] GOV	0.262	0.170	1.000						
[4] SIZE	0.412	0.344	0.426	1.000					
[5] DEBT	0.036	0.040	0.294	0.447	1.000				
[6] OP_LEV	0.279	0.411	0.025	-0.045	-0.123	1.000			
[7] CFLOW	-0.176	-0.178	-0.430	-0.505	-0.477	0.183	1.000		
[8] AGE	0.255	0.134	0.408	0.503	0.272	-0.091	-0.498	1.000	
[9] ROE	0.007	0.137	0.008	-0.000	0.067	-0.069	-0.069	-0.078	1.000

Table 6. IT Sector: Correlation Matrix of Independent Variables (MKT_CAP as the regressand)

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
[1] ENV	1.000							
[2] SOC	0.429	1.000						
[3] GOV	0.272	0.177	1.000					
[4] N_INC	0.334	0.103	0.319	1.000				
[5] A_TURN	-0.158	-0.265	0.245	-0.025	1.000			
[6] CFLOW	-0.185	-0.178	-0.4	-0.165	0.030	1.000		
[7] PE	-0.040	-0.155	-0.258	-0.274	-0.123	0.008	1.000	
[8] PB	-0.009	-0.090	0.002	-0.020	0.105	0.016	0.151	1.000

Table 7. Mean VIF Values to detect multicollinearity for all the models under the three sectors

Dependent Variables	Mean VIF Values		
	Financial Sector	Healthcare Sector	IT Sector
ROA	1.732	1.509	1.549
MKT_CAP	1.641	1.187	1.317

2.5. Multicollinearity

Multicollinearity occurs when multiple independent variables are highly related to each other. This could distort results; hence, wrong conclusions can be made if this occurs [39]. The "Variance Inflation Factor" (VIF) test is applied to detect possible multicollinearity between the independent variables [40]. If the mean VIF values are greater than 5, it is an indicator that multicollinearity is present. Table 6 represents the mean VIF values for all the models considered in the study for the three sectors. It can be seen from the values that the mean VIFs are less than 5, and hence, the multicollinearity problem does not exist in all six models.

2.6. Model Specification

Following the correlation analysis and multicollinearity test, the regression equations are formulated. The regression equation to measure how financial performance (as indicated by ROA) is influenced by ESG scores is as follows:

$$ROA = \alpha_0 + \alpha_1\ ENV + \alpha_2\ SOC + \alpha_3\ GOV + \alpha_4\ SIZE + \alpha_5\ DEBT + \alpha_6\ OP\_LEV + \alpha_7\ CFLOW + \alpha_8\ AGE + \alpha_9\ ROE + \varepsilon_1$$

Moreover, the equation used to find the impact of ESG scores on market valuation (as indicated by MKT_CAP) is as follows:

$$MKT\_CAP = \beta_0 + \beta_1\ ENV + \beta_2\ SOC + \beta_3\ GOV + \beta_4\ N\_INC + \beta_5\ A\_TURN + \beta_6\ CFLOW + \beta_7\ PE + \beta_8\ PB + \varepsilon_2$$

This study used panel data from 3 specific sectors. Therefore, both models are estimated for the financial, healthcare, and IT sectors. Panel data is evaluated through

fixed effects, random effects, and POLS models. The random effects model is applied on the premise that the individual effects of variables are stochastic and uncorrelated [41]. The fixed effects model is employed when a correlation among the independent variables is present [42]. Lastly, POLS is used when there is no major variation across individuals or time. Amongst these frameworks, the final models are determined on the basis of the Hausman test and the Breusch Pagan Lagrange Multiplier (LM) test.

2.7. Hauman Test

The "Hausman test" is employed to select a suitable framework among fixed effects, random effects, or pooled OLS. The null hypothesis of the Hausman test posits that "the random effects model or the pooled OLS model is consistent." The threshold level for significance is presumed to be 5 percent [43]. Therefore, if the p-value is below 0.05, the null hypothesis is dismissed, leading to the selection of the fixed effects model.

Table 7 presents the outcomes of the Hausman Test for all of the models. The p-values below 0.05 indicate the appropriateness of fixed effects models. Except for the MKT_CAP model in the healthcare sector, the p-values are below 0.05, suggesting the effective use of a fixed effects model. The MKT_CAP model in healthcare gives a p-value of 0.569, which means that more research is needed to compare the Pooled OLS model and the Random Effects Model. The Breusch-Pagan Lagrange Multiplier (LM) test has been used to determine the difference between random effects models and pooled OLS models.

Table 8. P-values of the Hausman Test for all the models under the three sectors

Dependent Variables	P-values (Hausman Test)		
	Financial Sector	Healthcare Sector	IT Sector
ROA	0.015	0.002	0.012
MKT_CAP	0.011	0.569	0.001

2.8. Breusch-Pagan LM test

The "Breusch-Pagan LM Test" is employed to assess the validity of the variance and ascertain whether random effects or POLS is the preferred model [44]. The null hypothesis presumes the "absence of a panel effect", indicating that POLS should be employed. The p-value for the Breusch-Pagan LM test in the healthcare MKT_CAP model is 0.000. This signifies that the Random Effects model is suitable because the null hypothesis was rejected.

2.9. Diagnostics

Diagnostic tests are tests done to help researchers detect any possible problems in their model. These tests help ensure the validity of the model and that the results are correct. The diagnostic tests done here were Autocorrelation and heteroskedasticity.

2.9.1. Autocorrelation

Autocorrelation occurs when errors in regression models are made more prominent over time and are related to their past values [45]. Autocorrelation needs to be tested because it makes estimates inefficient and statistical inferences less reliable. The "Wooldridge test" is used to detect any possible autocorrelation present in panel data. The "Wooldridge test" null hypothesis posits "the absence of autocorrelation". If the p-value is less than the specified level of significance, which in this case is 5 percent, then there is Autocorrelation. Table 8 represents the results for the Wooldridge test. As seen in the table, the p-value for the MKT_CAP models in all the sectors is 0.000, implying that the problem of Autocorrelation exists in all three models. On the contrary, for the ROA model, the p-values of the financial and healthcare sectors are greater than 0.05; hence, there is no autocorrelation. Finally, the p-value for the ROA model in the IT sector is 0.021, which is below the significance threshold. This signifies the presence of Autocorrelation in this model.

Table 9. P-values of the Wooldridge Test to detect Autocorrelation for all the models under the three sectors

Dependent Variables	P-values (Wooldridge Test)		
	Financial Sector	Healthcare Sector	IT Sector
ROA	0.263	0.056	0.021
MKT_CAP	0.000	0.000	0.000

2.9.2. Heteroskedasticity

Heteroskedasticity exists when the errors do not have a consistent variance across all the values. If Heteroskedasticity is present in the model, it could cause a bias in the standard error. The "Modified Wald Test" and "Wald Test" are used to detect heteroskedasticity depending on the model. "Modified Wald Test" is used for the fixed effects models, while the "Wald test" is used for the random effects model. For both tests, the null hypothesis is that "heteroskedasticity does not exist". If the p-value is less than 0.05, heteroskedasticity exists in the framework. Notably, for both models in all three sectors, the p-value for the tests is 0.000. This signifies the rejection of the null hypothesis for all frameworks. Therefore, heteroskedasticity is present in all the models considered in this study.

2.10. Correction for heteroskedasticity and Autocorrelation

The problem of Autocorrelation and heteroskedasticity must be corrected to ensure accurate results. Robust Regression must be used only when heteroskedasticity is present in fixed effects or random effects models. Robust Regression is a regression that corrects the effects of heteroskedasticity [46]. On the other hand, the Feasible Generalized Least Squares (FGLS) model is estimated if both Autocorrelation and heteroskedasticity are present. Hence, the FGLS model deals with both heteroskedasticity and Autocorrelation [47]. According to the above results, all

the MKT_CAP models have both Autocorrelation and heteroskedasticity; therefore, FGLS models are estimated for them. Contrarily, for the ROA models in the financial sector and healthcare sector, there is only a heteroskedasticity problem. For these two models, Fixed Effects Robust regression models are estimated. Lastly, for the ROA model in the IT sector, both problems exist, and thus, the FGLS model is used to estimate the coefficients.

3. Results

3.1. Descriptive Analysis

Table 10. Results for Descriptive statistics of the dependent and key independent variables

Variable	Sectors	Mean	Standard Deviation	Minimum	Maximum
ROA	Financial	0.036	0.056	-0.264	0.278
	Healthcare	0.078	0.089	-0.323	0.495
	IT	0.092	0.086	-0.204	0.467
MKT_CAP	Financial	57115.65	73673.48	2748.34	491760.53
	Healthcare	73834.03	81205.90	537.03	524224.19
	IT	30231.57	33765.37	2100.21	174056.95
ENV	Financial	1.926	2.337	-3.884	9.598
	Healthcare	3.895	2.63	-5.691	13.928
	IT	3.021	2.222	-6.207	8.149
SOC	Financial	2.5	1.788	0.043	9.242
	Healthcare	2.549	1.638	0.147	7.503
	IT	2.44	1.705	0.145	8.13
GOV	Financial	7.16	0.984	2.765	9.15
	Healthcare	7.073	0.815	3.365	10.373
	IT	6.789	0.661	5.346	8.874

This table (10) shows the results of the descriptive statistics of the regressand and the key regressors in 3 different sectors. The descriptive statistics imply that, on average, the ROA ($m_I = 0.092$, $m_H = 0.078$, $m_F = 0.036$) in the IT sector is the highest, followed by the healthcare sector and the financial sector, respectively. However, the average market capitalization ($m_H = 73834.03$, $m_F = 57115.65$, $m_I = 30231.57$) is high in the healthcare sector, after the financial and IT sectors. Moreover, the healthcare industry has the greatest environmental score (mean = 3.895, sd = 2.63), followed by the IT industry (mean = 3.021, sd = 2.222) and the financial industry (mean = 1.926, sd = 2.337). The Social score seems consistent across all the sectors, ranging between 2.44 and 2.55. Furthermore, the governance score is relatively high across all sectors, with the highest being the financial sector (mean = 7.16, sd = 0.984), followed by the healthcare (mean = 7.073, sd = 0.815) and IT sector (mean = 6.789, sd = 0.661). In terms of variability across sectors, the healthcare sector consistently shows the highest spread in key indicators. It has the greatest range in ROA (0.818) and market capitalization (₹523,687.16 million), indicating significant differences in profitability and firm size within the sector. Additionally, healthcare displays the widest variation in environmental (19.619) and governance scores (7.008), suggesting inconsistency in ESG practices across firms. The financial sector exhibits the highest variability in social scores (range = 9.199), implying diverse approaches to social responsibility, followed by the IT sector (7.985) and healthcare (7.356). For environmental scores, the IT sector has the second-highest range (14.356), while governance scores are most consistent in the IT sector (3.528), followed by the financial sector (6.385). Overall, the healthcare sector stands out for its broad variability across most metrics, the financial sector shows particular inconsistency in social aspects, and the IT sector appears to be the most consistent, especially in governance and firm size.

Table 11 displays the statistical characteristics of the control variables considered in the model, with ROA serving as the regressand. The data reveal that firm size is largest in the financial sector (mean = 11.569) and smallest in the IT sector (mean = 8.897), indicating that financial firms tend to be significantly larger in scale. Debt levels are lowest in the IT and healthcare sectors, suggesting more conservative leverage practices than the financial sector. When examining operating leverage, the financial sector reports the highest level (mean = -4.52, sd = 1.10), indicating greater reliance on fixed costs. In contrast, the IT sector shows a moderate level (mean = -2.35, sd = 0.88), while healthcare has the lowest (mean = -2.15, sd = 0.72), implying a relatively more flexible cost structure. In terms of cash flow, which reflects a firm's ability to generate internal funds, the IT sector performs the best (mean = 0.236, sd = 0.185), followed by healthcare (mean = 0.2, sd = 0.193), and then the financial sector (mean

= 0.113, sd = 0.102), indicating stronger operational efficiency in IT firms. In terms of Return on Equity (ROE), which considers a firm's efficiency in using equity from shareholders to produce profits, the IT industry exhibits the highest average ROE (3.16, sd = 3.758), succeeded by the finance sector (mean = 0.158, sd = 0.657) and the healthcare sector (mean = 0.155, sd = 2.896). These findings suggest that IT firms are more efficient in both capital utilization and profitability, while financial firms are more capital-intensive and carry higher fixed costs.

Table 11. Results for Descriptive Statistics of the controlled variables for ROA as the regressand

Variable	Sectors	Mean	Standard Deviation	Minimum	Maximum
SIZE	Financial	11.569	1.647	6.084	15.17
	Healthcare	9.882	1.468	5.617	12.52
	IT	8.897	1.074	6.067	11.957
DEBT	Financial	-0.249	0.311	-2.695	0.207
	Healthcare	-0.581	0.424	-2.214	0.209
	IT	-0.682	0.559	-1.927	0.644
OP_LEV	Financial	-4.519	1.103	-9.667	-1.591
	Healthcare	-2.147	0.721	-3.862	-0.607
	IT	-2.351	0.881	-4.773	-0.51
CFLOW	Financial	0.113	0.102	0.003	0.455
	Healthcare	0.200	0.193	0.003	0.796
	IT	0.236	0.185	0.006	0.821
AGE	Financial	4.239	0.795	2.565	5.481
	Healthcare	3.789	0.703	1.099	5.165
	IT	3.65	0.652	2.485	5.153
ROE	Financial	0.158	0.657	-7.348	5.959
	Healthcare	0.155	2.896	-39.684	35.181
	IT	0.316	3.758	-31.125	38.38

Table 12. Results for Descriptive statistics of the controlled variables for Market capitalization as the dependent variable

Variable	Sectors	Mean	Standard Deviation	Minimum	Maximum
N_INC	Financial	3854496.1	6272662.1	-16720000	49552000
	Healthcare	2949446.3	4138323.2	-9015000	31372000
	IT	1082332.7	1961427.6	-5833000	13190000
A_TURN	Financial	0.252	0.194	0.02	0.781
	Healthcare	0.801	0.545	0.034	3.235
	IT	0.706	0.359	0.191	2.378
PE	Financial	21.257	17.617	3.762	148.432
	Healthcare	43.325	53.527	-24.417	446.947
	IT	52.639	60.681	5.357	490.631
PB	Financial	5.331	15.202	-16.161	192.832
	Healthcare	16.155	48.371	-33.892	612.845
	IT	10.634	16.208	0.561	143.751

Similarly, Table 12 presents the descriptive statistics of the control variables used in the model with market capitalization as the dependent variable. The financial sector records the highest average net income (m = 3,854,496.1, sd = 6,272,662.1), followed by healthcare (m = 2,949,446.3, sd = 4,138,323.2) and IT (m = 1,082,332.7, sd = 1,961,427.6), indicating greater profitability in financial firms, though with higher variability. In terms of asset turnover, which reflects operational efficiency, healthcare leads (m = 0.801, sd = 0.545), followed by IT (m = 0.706, sd = 0.359), while the financial sector shows the lowest efficiency (m = 0.252, sd = 0.194). The IT sector reports the highest average PE ratio (m = 52.639, sd = 60.681), suggesting greater investor confidence and growth expectations, followed by healthcare

(m = 43.325, sd = 53.527), with the financial sector having the lowest (m = 21.257, sd = 17.617). Similarly, the PB ratio is highest in healthcare (m = 16.155, sd = 48.371), followed by IT (m = 10.634, sd = 16.208) and financial (m = 5.331, sd = 15.202), indicating that investors value healthcare and IT stocks more richly relative to their book value, likely due to stronger perceived growth potential.

3.2. Regression Analysis

The results for the regression framework in Table 13 evaluate the impact of these listed independent variables on the dependent variable ROA. The results indicate that environmental scores do not have a statistically significant impact on ROA across any sector, with p-values of 0.628 (financial), 0.105 (IT), and 0.772 (healthcare). Similarly, social scores also show no significant influence on ROA in the financial (p = 0.470), IT (p = 0.578), and healthcare (p = 0.822) sectors. For governance scores, only the financial sector shows a considerable positive influence on ROA (p = 0.039), where an increment of one unit in governance score is associated with a 0.012 rise in ROA. In contrast, governance scores in the IT (p = 0.318) and healthcare (p = 0.758) sectors do not significantly affect ROA.

Table 13. Results of the Regression Model considering ROA as the dependent variable for the three sectors

Dependent Variable (ROA)			
Independent Variables	**Financial Sector (Fixed Effects, Robust SE)**	**Healthcare Sector (Fixed effects, Robust SE)**	**IT Sector (FGLS)**
ENV	**0.001** (0.002) 0.628	**-0.008** (0.028) 0.772	**0.004** (0.002) 0.105
SOC	**0.001** (0.001) 0.470	**0.001** (0.004) 0.822	**-0.002** (0.003) 0.578
GOV	**0.012**** (0.005) 0.039	**0.004** (0.012) 0.758	**0.007** (0.007) 0.318
SIZE	**-0.025***** (0.005) **0.000**	**0.060** (0.038) 0.130	**0.006** (0.006) 0.295
DEBT	**-0.005** (0.022) 0.841	**-0.042** (0.061) 0.498	**-0.035***** (0.009) **0.000**
OP_LEV	**0.008** (0.005) 0.103	**-0.017** (0.035) 0.620	**0.001** (0.006) 0.879
CFLOW	**0.056** (0.092) 0.551	**-0.181*** (0.102) 0.085	**0.170***** (0.033) 0.000
AGE	**-0.007** (0.057) 0.902	**-0.091** (0.062) 0.151	**0.050***** (0.009) 0.000
ROE	**0.005** (0.006) 0.449	**0.001** (0.001) 0.356	**0.001** (0.001) 0.552
Constant	**0.301** (0.200) 0.146	**-0.215** (0.213) 0.319	**-0.265***** (0.066) 0.000

*Standard errors in parentheses and p-value below standard errors; ***p<0.01, **p<0.05, *p<0.1*

With regard to the control variables, the size of a company in the financial sector has a significant negative effect on ROA. In particular, when a company's size increases by one unit, its ROA decreases by 0.025. In the IT sector, debt levels significantly adversely impact ROA (p = 0.000). For every one-unit increase in debt level, ROA falls by 0.035. There is a strong link between cash flow and both the healthcare (p = 0.085) and IT (p = 0.000) sectors, but the effects are the opposite. In healthcare, a one-unit increase in cash flow leads to a 0.181 decrease in ROA, while in IT, it leads to a 0.17 increase. Lastly, the age of a company is very important in the IT sector. A one-unit rise in firm age results in a 0.05 increase in ROA, which means that older IT companies tend to outperform younger ones.

Table 14. Results of the Regression Model considering Market capitalization as the dependent variable for the three sectors

Dependent Variable (MKT_CAP)			
Independent Variables	**Financial Sector (FGLS)**	**Healthcare Sector (FGLS)**	**IT Sector (FGLS)**
ENV	**0.079***** (0.019) 0.000	**0.056***** (0.020) 0.005	**0.070***** (0.024) 0.004
SOC	**0.019** (0.026) 0.463	**0.126***** (0.029) 0.000	**0.062**** (0.030) 0.037
GOV	**0.080**** (0.040) 0.045	**0.267***** (0.053) 0.000	**-0.080** (0.084) 0.340
N_INC	**0.000** (0.000) 0.000	**0.000** (0.000) 0.000	**0.000** (0.000) 0.000
A_TURN	**-0.798**** (0.335) 0.017	**-0.212**** (0.105) 0.043	**-0.063** (0.136) 0.646
CFLOW	**-0.684**** (0.659) 0.017	**-0.766***** (0.280) 0.006	**-0.181** (0.306) 0.554
PB	**0.007***** (0.002) 0.002	**-0.001** (0.001) 0.298	**0.016***** (0.003) 0.000
PE	**0.014***** (0.003) 0.000	**0.002**** (0.001) 0.030	**-0.002*** (0.001) 0.053
Constant	**0.301** (0.200) 0.146	**-0.215** (0.213) 0.319	**-0.265***** (0.066) 0.000

*Standard errors in parentheses and p-value below standard errors; ***p<0.01, **p<0.05, *p<0.1*

The regression analysis results in Table 14 assess the influence of multiple independent variables on the dependent variable, namely market capitalization. The environmental score markedly affects market capitalization in all three sectors: financial ($p = 0.000$), IT ($p = 0.004$), and healthcare ($p = 0.005$). The association is consistently positive. A one-unit rise in the environmental score results in an increase in market capitalization of 0.079 units in the financial sector, 0.07 units in the IT sector, and 0.056 units in the healthcare sector, with the most significant effect noted in the financial sector. The social score has a substantial impact on market capitalization in the healthcare ($p = 0.000$) and IT industries ($p = 0.037$), but not in the financial sector ($p = 0.463$). In both prominent sectors, the impact is favourable: a one-unit rise in the social score elevates market capitalization by 0.126 units in the healthcare sector and 0.062 units in the IT sector, demonstrating that the social component exerts the most substantial influence in the healthcare industry. The governance score significantly enhances market capitalization in the healthcare ($p = 0.000$) and financial sectors ($p = 0.045$), but not in the IT sector ($p = 0.340$). An increase of one unit in the governance score results in a 0.267 unit rise in market capitalization within the healthcare sector and a 0.08 unit rise in the financial sector, indicating that governance exerts a more significant influence in the healthcare sector.

In the control variables, asset turnover and cash flow are significant in the financial and healthcare industries, with negative coefficients in both instances. An increase of one unit in asset turnover reduces market capitalization by 0.798 units in the financial sector ($p = 0.017$) and by 0.212 units in the healthcare sector ($p = 0.043$). A one-unit increase in cash flow leads to a decrease in market capitalization of 0.684 units in the financial sector ($p = 0.017$) and 0.212 units in the healthcare sector ($p = 0.006$), suggesting that increased operational intensity or liquidity does not necessarily result in enhanced market valuation in these sectors. The price-to-Book (PB) ratio is a notable positive predictor of market capitalization in both the financial ($p = 0.002$) and information technology (IT) ($p = 0.000$) sectors. A one-unit increase in the price-to-book (PB) ratio elevates market

capitalization by 0.007 units in the financial sector and 0.016 units in the information technology sector. The price-to-earnings (PE) ratio is pertinent for the financial ($p = 0.000$), healthcare ($p = 0.030$), and IT ($p = 0.053$) industries. An increase of one unit in price-to-earnings ratio results in a 0.007 unit increase in market capitalization within the financial sector and a 0.002 unit increase in healthcare, underscoring the significance of valuation multiples in market value, especially in finance. In the IT sector, a one-unit increase in PE correlates with a 0.002-unit fall in market capitalization, signifying a negative association.

4. Discussion

The regression results highlight that ROA is significantly influenced by governance scores in the financial sector, and this can be attributed to several factors. Financial firms operate in a highly regulated environment, and strong governance, characterized by transparency, board diversity, and sound decision-making, enhances their ability to oversee compliance and reduce risk exposure [48]. Well-governed financial institutions are better positioned to meet regulatory requirements and maintain investor trust, which contributes directly to improved financial performance [49]. Additionally, diverse and well-structured boards often lead to more effective oversight and strategic direction, further reinforcing the positive impact of governance on ROA in this sector [50].

In contrast, ROA in the IT and healthcare sectors is not significantly influenced by governance scores. This suggests that profitability in these sectors is driven more by innovation, technological efficiency, and operational performance rather than governance structures alone. Governance factors in these industries may have a more long-term, indirect effect on financial outcomes, rather than an immediate influence [51]. In healthcare, for example, elements like board size or bureaucracy may even hinder agility, potentially having a negative or negligible effect on short-term ROA. Moreover, in healthcare, external forces such as government regulations and public policies, especially in countries like the US, tend to directly impact profitability more than internal governance practices [52].

While healthcare companies do contribute to environmental impact, their direct climate footprint is lower compared to sectors like energy or manufacturing [53, 54, 55]. Environmental concerns are often secondary to patient care, which remains the primary focus. As a result, these companies are more likely to invest in improving healthcare services to boost profitability rather than prioritizing environmental performance [56]. In terms of social score, hospitals tend to have naturally high ratings due to their focus on patient welfare. However, since this is already central to their operations, changes in social score may have little to no effect on profitability [57]. For the IT sector, how environmental and social scores are calculated may not fully reflect a company's strengths. Key value drivers like innovation, efficiency, and technological advancement are often overlooked in ESG metrics, even though they play a major role in determining performance in the tech industry [58].

When it comes to environmental scores, the Regression shows they significantly influence market capitalization in all three sectors, financial, IT, and healthcare, with a consistently positive effect. This indicates an increasing investor inclination towards environmentally responsible companies, regarded as lower risk, better managed, and more sustainable over time [59]. Firms exhibiting robust environmental performance frequently showcase enhanced operational efficiency and proactive strategies, rendering them more appealing to investors [60,61]. Consequently, elevated environmental scores generally correlate with increased market valuations across many sectors [59]. Some studies had previously had conflicting results in comparison to this study. For example, Ahmad, A. Mobarek, and N. N. Roni's study said that the environmental score did not significantly impact market value. This could be because of the data sourced from different geographies, periods, or a different mix of sectors studied.

However, the influence of social scores is more sector-specific. In the healthcare and IT sectors, social scores positively affect market capitalization, indicating that investors may reward firms perceived as socially responsible, particularly in industries where stakeholder relationships, such as patient care or employee well-being, are central [62]. In contrast, the financial sector does not show a significant relationship between social scores and market capitalization. This could be because customer care and ethical practices are viewed as baseline expectations in finance, not value-adds that influence investor perception [63].

The governance score significantly affects market capitalization in both the healthcare and financial sectors. In healthcare, governance failures can lead to compliance violations, reputational damage, and loss of patient trust, making strong governance critical to protecting firm value [62]. In finance, governance is closely tied to risk management and regulatory compliance, and weak governance increases vulnerability to penalties and investor distrust, thereby lowering market capitalization [64, 65, 66]. On the other hand, in the IT sector, governance appears to have less influence on firm valuation, possibly due to lighter regulatory oversight and greater emphasis on innovation and growth potential as primary drivers of market cap [67]. Similar to Kim and Li's study, it was found that governance positively impacts ROA in the finance sector.

Furthermore, the negative coefficients for asset turnover and cash flow in the financial and healthcare sectors indicate that while these operational variables might reflect internal

performance, they may not align with market perceptions of long-term value. High turnover or strong cash flow may not necessarily translate to higher valuation if not coupled with Sustainability and strategic direction. Finally, valuation multiples like PE and PB ratios show sector-dependent impacts. The PE ratio positively influences market cap in the financial and healthcare sectors, but interestingly shows a slight negative association in IT, suggesting that high earnings multiples may not always reflect true investor sentiment in tech, where growth narratives and innovation often outweigh current earnings. Similarly, while the PB ratio increases market capitalization in the financial sector, it shows a negative effect in IT, possibly due to the intangible-heavy nature of tech companies, where book value is less reflective of actual firm value.

5. Conclusion

This paper studied the effect of Environment, Social, and Governance scores on profitability and market performance. Specifically, the ESG metrics were analyzed to find their impact on the financial, IT, and healthcare sectors using ROA and Market Capitalization variables. The study used panel data, and a correlation matrix was created to remove any multicollinearity. The VIF test was used to detect any possible multicollinearity, and no multicollinearity was indicated. Then, the Wooldridge test was used to determine if any autocorrelation was present. This was followed by the Modified Wald/LM Test to find any heteroskedasticity. When determining ROA in the finance sector, it was found that the environmental score and social score did not have a significant impact, while the governance score did.

For the healthcare and IT sector, neither of the individual ESG scores was significant. For market capitalization, environmental and governance scores were found to be significant in the finance sector, while the social score was not significant. In the healthcare sector, all separate ESG factors were significant. In the IT sector, environmental and social factors significantly influenced market valuation, but governance was insignificant. The ROA of the finance sector was affected by the governance score because of strict regulations. Governance scores, more specifically, are affected by things such as risk management practices and oversight. Finance sector companies might use strategies that comply better with regulatory standards. ROA was not significantly affected by governance scores in the healthcare and IT sectors because newer innovations and higher efficiency primarily affected profitability. These factors more directly impact these industries than governance practices. IT firms can grow largely due to things such as product development, which helps raise ROA independent of the governance score. ROA is not impacted by environmental or social scores in any sector for a variety of reasons. For example, the healthcare sector specifically values patient safety over environmental Sustainability. Hospitals use single-use items and strong chemical cleaners, which help avoid cross-contamination but, as a result, contribute to large amounts of pollution. Market capitalization is affected by the environment in all the different sectors because investors value the environmental score as a metric showing which companies are more sustainable and have lower risk exposure. This means that higher environmental scores can raise company valuation. Market capitalization is also affected by the social score in healthcare and IT. Valuation is most impacted by governance in finance and healthcare due to these sectors being highly regulated in comparison to the IT sector.

Limitations and Policy Implications

However, one limitation is that this research only includes 3 sectors and does not apply to other industries. This study did not focus on the effects of ESGs on other industries. Along with that, the study was only done with the U.S.-based companies. So, it lacks scope outside these sectors and the US. Along with that, ESG scores are varied and can be interpreted in many different ways. So, ESG metrics might not always capture complete pictures of companies' environmental, social, and governance actions.

This study can be used by other researchers interested in writing their reports. Other researchers can cite this paper and its findings. It can also be used by investors in analyzing the direct impact of ESGs. Investors can use this information to understand how a company may respond in the long term for specifics like valuation. This paper can also be referred to by policymakers to create laws and policies that focus on ESG disclosure. Policy makers can push for more sustainable practices and defend them by arguing that they help companies improve the quality of life of individuals. This research can be used by advocacy groups to push firms towards more sustainable practices.

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