

Linkage Between Financial Viability and ESG Performance: A Panel Study of Select Energy Sector in India

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ABSTRACT

Energy plays a pivot a role in developing India 's economic and social development, from industrial growth to improving standard of living. On the other hand, energy is responsible for the majority of climate change-causing greenhouse gas emissions, mostly from the burning of fossil fuels. India stands 3rd in global ranking in emission of CO₂ gases from fuel combustion [IEA]. With the growing concern for sustainability, in the energy sector, the responsibility of company has widened with the objective of strengthening financial position together with its involvement in the socially responsible activities. The study aims to explore the influence of CSR together with company financial performance on its future growth and to know the overall impact on ESG (Environmental, Social, and Governance) score of the energy sector in India.

Keywords: *Energy Sector, Financial Performance, ESG, Panel Data Analysis*

1. INTRODUCTION

With the growing concern for sustainable development, the responsibility of company has widened with the objective of strengthening financial position together with its involvement in the socially responsible activities. The energy sector being the major sector contributing towards the carbon emission is an alarming and the need for proper mechanism to control the emission is crucial. To assess the overall responsibility of company towards environment, social, and corporate governance; Ministry of Corporate Affairs had released the National Guidelines on Responsible Business Conduct (NGRBC), updating and expanding upon the earlier NVGs (IICA, 2018.). Earlier, the Ministry of Corporate Affairs (MCA) has made it compulsory for companies to report on their Corporate Social Responsibility (CSR) activities as required by the Companies Act, 2013 (Ministry of Corporate Affairs, 2011.). Later in

2021, SEBI mandated top 1000 listed entities by market capitalization to include BRSR as part of their annual report from 2022-23 by replacing the BRR (SEBI, 2019.). The disclosure of ESG score and CSR activities information are essential for financial decision making to the investors, and stakeholders to achieve financial sustainability (Thakrar et al, 2025.). The previous literature on the role of ESG score in Company financial performance may vary with different financial variables, adoption of different methods, and the industries. For instance, (Kumar & Firoz, 2022) reported there is a positive and significant relationship between the ESG score and company financial performance. (Sharma et al., 2020) also reported that there is a positive and significant association between the financial performance with the level of ESG disclosure. Whereas, (Nenavani et al., 2024) study reveals a mixed findings when analyzing the ESG at disaggregate level in relation to company financial performance.

The past study on CSR expenditure (Fauzi & Idris, 2009) has also revealed that there is a positive impact in the company's overall performance as to the developing interest of the stakeholders, building reputation, and encouraging the ideas of employee's well-being etc.

2. REVIEW OF LITERATURE

Many studies have been carried out to find the relationship between the ESG disclosure and company financial performance, by taking different data sets, different period of the study and the different methodology have been adopted. For instance, (Dalal & Thaker, 2019) conducted the study based on the data of 65 Indian firms listed on the NSE 100 ESG Index database, covering the period from 2015 to 2017, by using the random effect panel data regression analysis, with ROA, TQ's as dependent variable and ESG score as independent variable, the study revealed that good corporate ESG performance enhances financial performance. Similarly, (Bala, 2022) also reported that there is a significant relationship between ESG practices and financial performances of companies. Among ESG factors, governance practices are the most significant one towards financial performance.

(Thakrar et al., 2025) studied on the sample of NIFTY 500 companies for a period of 2023-24, by incorporating ESG scores, marketing costs, sales, and market capitalization as explanatory variable, using multinomial and binomial logistic regression, the results shows that ESG scores and marketing costs are significant predictors of profitability. The findings indicate that ESG scores and marketing costs are significant predictors of profitability. Companies with strong ESG scores tend to exhibit higher profitability, while firms with below-average ESG scores face

challenges in achieving sustainable financial returns. Another study, concluded that ESG disclosure index, board diversity, and financial performance positively influence company value. The presence of FIRM SIZE as a moderating variable attenuated the impacts of both ESG and GENDER on firm value. (Prasetya Willim et al., 2025)

(Singh & Tarkar, 2024) conducted a survey and a sample of 174 questionnaires were collected from the managers and middle level staff who belong to different industrial sectors. IT companies are regarded as highly technology oriented and labour intensive as well, which has a significant influence on ESG factors. The results indicated that three factors, environment, social, and governance, positively influence the growth strategies of young companies. Moreover, the governance factor was the strongest analyst of growth strategies in young companies, which means that the governance factor greatly influences the growth strategies of young companies.

(Putri & Puspawati, 2023) carried a study on the listed companies in Indonesia Stock exchange (IDX) for the period 2018-2021, ROA and TQ as dependent variable, the results showed that leverage only influenced financial performance (ROA) and disclosure of ESG, firm size, leverage influenced financial performance (TQ).

(Joshi & Joshi, 2024) based on a sample of 94 Indian firms listed on the National Stock Exchange of India between 2015 and 2020. The study employed fixed effects and random effects panel data models as an appropriate methodology. Cash holdings, Assets intangibility, analyst coverage, net working capital, and dividend yield was considered as an explanatory variable and leverage, cash flow, growth opportunities, size, and capital expenditure are control variable. The findings show that firm size, asset intangibility, analyst coverage, and operating cash flow influence firms' ESG scores positively, whereas leveraging and strategic holding impact them negatively. In addition to the mentioned variables, cash holdings positively influence firms' environmental, social, and governance scores.

(Kumar & Firoz, 2022) explored the connection between the ESG disclosure and company financial performance (CFP) by using a sample of S&P BSE top 100 Indian firms for the period 2015-2019, the study shows that there is a positive relationship between the ESG disclosure scores and CFP as well as the individual ESG factor scores except for social disclosures. (Sharma et al., 2020) also reported that there is a positive and significant association between the financial performance with the level of ESG disclosure.

(Nenavani et al., 2024) analysed the ESG measures and financial performance of logistics companies, by collecting data of eighteen Indian listed logistics companies and five global companies over the period of 2013-2023. The authors considered the financial variables, namely, ROE, ROA, Net Profit Margin, and Revenue growth, as dependent variables. And ESG disclosure index in terms of aggregate and disaggregate scores was used as independent variables. The aggregate ESG score is significant across all the dependent variables except revenue growth. While analysing the effects of the ESG score at disaggregate level E S G, mixed findings reveal that not all the variables of the ESG score are statistically significant for all four dependent variables. For instance, the environment is insignificant across all four models.

(Chen et al., 2018) examined how mandatory disclosure of corporate social responsibility (CSR) impacts firm performance and social externalities by using a difference-in-differences design. The study found that mandatory CSR reporting firms experience a decrease in profitability after the mandate. In addition, the cities most impacted by the disclosure mandate experience a decrease in their industrial wastewater and CO₂ emission levels. The authors suggested that mandatory CSR disclosure alters the firm behaviour towards sustainability.

The author explores and tests the sign of the relationship between corporate social responsibility and financial performance. The dataset includes most of the S&P 500 firms and covers the years 1996-2000. The results indicate that the relationship is positive and statistically significant. (School of Business & Tsoutsoura Berkeley, 2004)

(Agarwala et al., 2023) carried a study on sample of 76 non-financial companies listed on the National Stock Exchange for a period of seven years (from 2013 to 2019). The study has used several statistical tools such as the static panel data model and the Arellano–Bond dynamic panel data model based on generalized method of moments approach. The results of the analysis have indicated board independence have a significant positive relationship with the firms' CSR performance. However, board size and number of board meetings have been found to have a negative relationship with CSR. Further, outcomes have also revealed that variables such as companies' size and liquidity have a positive effect on the extent of CSR activities performed.

Another study, (Fauzi & Idris, 2009) used a questionnaire-based survey research design. The questionnaires include items representing variables like; (corporate social performance, corporate financial performance, business

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environment, strategy, organization structure, and control system) were sent to the respondents who are managers of state-owned companies (BUMN) and private owned companies using post and e-mail services. There is a positive relationship between CFP and CSP under the slack resource theory and under good management theory.

(Cho et al., 2019) examined the 191 sample firms listed on the Korea Exchange. The Korea Economic Justice Institute (KEJI) index of 2015 was used to measure CSR performance; profitability and firm value were used to measure corporate financial performance. Return on assets was used as a proxy for profitability, and Tobin's Q was used as a proxy for firm value. The correlation between these variables and CSR performance was examined through correlation and regression analysis. The results confirm that CSR performance has a partial positive correlation with profitability and firm value. Analysis of the correlation between CSR performance and financial performance indicators revealed a positive relationship between the growth rate of total assets and corporate soundness and social contribution.

A sample of 3668 data was collected from public listed companies in China, covers the period between 2009 and 2021, and along with data from their respective cities, to investigate the impact of the Carbon emissions trading pilot policy on their environment, social, governance (ESG) performance. The authors concluded that the policy had greatly improved the corporate ESG performance. (Zhou et al., 2025)

After going through above literatures, the researchers found that the comparative study on the social practices, and company financial performance of energy sector post covid was inadequate. Therefore, the study is an attempt to investigate the relationship between the ESG, firm size and the company financial performance in the energy sector.

3. OBJECTIVES

The study aims:

- to explore the influence of CSR together with companies' financial performance on its future growth of the energy sector in India
- to know the overall impact on ESG (Environmental, Social, and Governance) score of the energy sector in India

4. RESEARCH METHODOLOGY

In the study the researchers' have considered those companies which belongs to the energy sector, as the energy sector emits the maximum green-house gases. To check the financial viability and its future sustainability keeping in mind the stakeholder's theory the study considers a sample of twenty-two from NSE and BSE listed companies based on their market capitalization for the last five financial years i.e. from 2020-2025. The period of 2020-2025 was selected because of availability of all selected variables together. The description of the variables and its sources are mentioned in table 2. The study tries to understand the data property of the variables undertaken in descriptive statistics. The study also undergoes certain tests and analysis to determine the selection of best-fit model among the ordinary least square model (OLS), fixed effect model (FEM) and random effect model (REM), such as restricted F test which selects the optimum model to be FEM over OLS, the BP-LM (1980) test which selects REM over OLS and the Hausman (1978) test which recommends FEM over REM.

The study examines the relationship between financial performance and Environmental, Social, and Governance (ESG) performance using panel data from 22 firms over the period 2021–2025. Four econometric models are applied to analyse the link between efficiency, liquidity, profitability, solvency, CSR expenditure, firm size, and ESG scores. The study considers profitability, solvency, CSR expenditure, and operational efficiency as independent variables, while firm size and ESG performance are treated as dependent variables in different model specifications.

TABLE 1: Distribution by Industry

Energy Sector	Emitter of 70-76 % of GHGs*
Distribution by Industry	Number of Companies**
Refineries	8
Oil Exploration and Production	15
Power Generation & Distribution	43
Gas Distribution	10
Others Industrial Gases & Fuels	5
LPG	1
Renewables	13

Source: Collected from <https://zerodha.com/markets/sector/energy/>* and <https://www.moneycontrol.com/markets/sector-analysis>**

The above TABLE 1 showcases the distribution of companies within the energy sector. The highest number of companies belong to the Power Generation & Distribution (43 companies), followed by Oil Exploration & Production (15 companies) and Renewables (13 companies). Since the energy sector contributes around 70–76% of greenhouse gas emissions, selecting companies from this sector is appropriate for studying the financial and ESG performance. The table shows that the sample covers different segments of the energy industry, making the study more representative and reliable.

TABLE 2: Description of Variables

Variable	Abbreviation	Description	Formula	Source
Firm's Size	LnFS	Market Capitalization of Company	Natural Logarithm of Market Capitalization	CMIE Prowess
Efficiency	EF	Tobin's Q	Market Capitalization / Total Assets	CMIE Prowess
Liquidity	LI	Current Ratio	Current Assets / Current Liabilities	CMIE Prowess
Profitability	PR	Return on Assets	Net Profit / Total Assets	CMIE Prowess
Solvency	SO	Equity Ratio	Total Equity / Total Assets	CMIE Prowess
Corporate Social Responsibility	CSR	CSR expenditure to be incurred as per Companies Act 2013	Multiplied with 100	CMIE Prowess
Environmental, Social and Governance Score	LnESG	Corporate Sustainability	Natural Logarithm of ESG Score	Crisil ESG Ratings & Analytics

Source: Presented by the Researchers

The researchers' have used the following models for a comparative analysis among the selected variables.

$$\text{LnFS}_{it} = c + \beta_1 \text{EF}_{it} + \beta_2 \text{LI}_{it} + \beta_3 \text{PR}_{it} + \beta_4 \text{SO}_{it} + \beta_5 \text{CSR}_{it} + u_{it} \dots \dots \dots \text{(I)}$$

$$\text{LnFS}_{it} = c + \beta_1 \text{EF}_{it} + \beta_2 \text{LI}_{it} + \beta_3 \text{PR}_{it} + \beta_4 \text{SO}_{it} + \beta_5 \text{CSR}_{it} + \beta_6 \text{LnESG}_{it} + u_{it} \dots \dots \dots \text{(II)}$$

$$\text{LnESG}_{it} = c + \beta_1 \text{EF}_{it} + \beta_2 \text{LI}_{it} + \beta_3 \text{PR}_{it} + \beta_4 \text{SO}_{it} + \beta_5 \text{CSR}_{it} + u_{it} \dots\dots\dots(\text{III})$$

$$\text{LnESG}_{it} = c + \beta_1 \text{EF}_{it} + \beta_2 \text{LI}_{it} + \beta_3 \text{PR}_{it} + \beta_4 \text{SO}_{it} + \beta_5 \text{CSR}_{it} + \beta_6 \text{LnFS}_{it} + u_{it} \dots\dots (\text{IV})$$

c is the slope, β_1 to β_6 are the coefficient, whereas i stands for the company number, t stands for the year and u is the error term of each model.

TABLE 3: Descriptive Statistics

	LnFS	EF	LI	PR	SO	CSR	LnESG
Mean	13.61	2.43	1.44	0.06	0.5	2.03	3.98
Median	13.54	1.26	1.01	0.05	0.52	2	4
Maximum	16.81	19.95	8.13	0.17	0.93	4.08	4.18
Minimum	11.55	0.44	0.14	-0.004	0.08	1.97	3.76
Std. deviation	1.19	3.02	1.33	0.04	0.19	0.2	0.09
Observations	110	110	110	110	110	110	110

Source: Computed from the collected secondary data using E-views 22 (student version)

Based on the descriptive analysis in TABLE 3, the average of Firm Size is 13.61 with a standard deviation of 1.19, indicating moderate variation among companies. Efficiency has a mean of 2.43 and a high standard deviation of 3.02, showing large differences in market performance. Liquidity averages 1.44, suggesting firms can meet short-term obligations. Profitability is relatively low at 0.06, while Solvency averages 0.50, indicating balanced financing. CSR has a mean of 2.03 and ESG has 3.98 with very low variation (0.09), showing similar sustainability performance across firms.

TABLE 4: Correlation Matrix

	LnFS	EF	LI	PR	SO	CSR	LnESG
LnFS	1						
EF	-0.067	1					
LI	-0.394*	-0.049	1				
PR	-0.574*	0.074	0.374*	1			
SO	-0.496*	0.111	0.613*	0.615*	1		
CSR	0.228*	0.311*	-0.111	-0.183**	0.045	1	
lnESG	0.164***	0.154***	-0.321*	-0.132	-0.371*	0.034	1

Note(s): *, ** and *** denotes the significance level of correlation at 1%, 5% and 10%, respectively

Source: Computed from the collected secondary data using E-views 22 (student version)

Based on the results of correlation matrix (TABLE 4), it was found that the Firm Size is negatively related to Liquidity, Profitability, and Solvency, but positively related to CSR and ESG. Liquidity and Solvency have a strong positive relationship, and Profitability is also positively related to Solvency.

TABLE 5: Model I

Variable	POLS [#]		REM [^]		FEM	
	Coefficient	Std. Errors	Coefficient	Std. Errors	Coefficient	Std. Errors
c	13.05* (-13.5)	0.97	13.65* (63.14)	0.21	13.64* (232.93)	0.05
EF	-0.03 (-1.00)	0.03	0.006*** (1.77)	0.003	0.006*** (1.77)	0.003
LI	-0.1 (-1.23)	0.08	0.005 (0.99)	0.005	0.005 (1.01)	0.005
PR	-10.42* (-3.69)	2.82	0.26 (0.79)	0.33	0.29 (0.89)	0.33
SO	-1.19 (-1.64)	0.72	-0.23** (-2.29)	0.10	-0.21** (-2.13)	0.10
CSR	1.02 ** (2.15)	0.47	0.01 (0.66)	0.02	0.01 (0.58)	0.02
R ²	0.40		0.06		0.99	
Adjusted R ²	0.37		0.02		0.99	
F-statistic	14.06*		1.47		3931.3*	

Note(s): *, ** and *** denotes the significance level of correlation at 1%, 5% and 10%, respectively.

Parenthesis below the value of coefficients displays the value of *t*-statistics

[#] POLS is not applicable as the Breusch-Pagan test result is significant at 5 % level of significance, H_0 : POLS is appropriate.

[^] REM is not applicable as the Hausman test result is significant at 5 % level of significance, H_0 : REM is preferred.

Source: Computed from the collected secondary data using E-views 22 (student version)

The above TABLE 5 showcase the Model I as mentioned above, where the Firm Size is dependent variables without considering ESG. Under the Fixed Effect Model (FEM), Efficiency has a positive and weakly significant effect on Firm Size, while Solvency has a negative and significant effect. Liquidity, Profitability, and CSR are

not significant. The model shows a very high R^2 value of 0.99, indicating strong explanatory power.

TABLE 6: Model II

Variable	POLS [#]		REM [^]		FEM	
	Coefficient	Std. Errors	Coefficient	Std. Errors	Coefficient	Std. Errors
c	12.36* (2.80)	4.40	14.32* (36.59)	0.39	14.33* (43.76)	0.32
EF	-0.03 (-1.01)	0.03	0.003 (0.86)	0.003	0.003 (0.85)	0.003
LI	-0.10 (-1.20)	0.08	0.006 (1.20)	0.005	0.007 (1.22)	0.005
PR	-10.48* (-3.66)	2.85	0.24 (0.75)	0.32	0.27 (0.85)	0.32
SO	-1.16 (-1.51)	0.76	-0.22** (-2.23)	0.09	-0.20** (-2.08)	0.09
CSR	1.02** (2.13)	0.47	0.03 (1.01)	0.02	0.02 (0.95)	0.02
LnESG	0.17 (0.16)	1.05	-0.17** (-2.10)	0.08	-0.17** (-2.13)	0.08
R^2	0.40		0.10		0.99	
Adjusted R^2	0.36		0.05		0.99	
F-statistic	11.61*		1.96**		3947.54*	

Note(s): *, ** and *** denotes the significance level of correlation at 1%, 5% and 10%, respectively.

Parenthesis below the value of coefficients displays the value of t -statistics

[#] POLS is not applicable as the Breusch-Pagan test result is significant at 5 % level of significance, H_0 : POLS is appropriate.

[^] REM is not applicable as the Hausman test result is significant at 5 % level of significance, H_0 : REM is preferred.

Source: Computed from the collected secondary data using E-views 22 (student version)

In TABLE 6 (Model II), with the addition of ESG as independent variable, and the Firm size as dependent variable; results inSolvency remains negatively significant, and ESG also shows a negative and significant effect on Firm Size. Other variables remain insignificant. The R^2 value is again 0.99, suggesting the model explains most of the variation in Firm Size.

TABLE 7: Model III

Variable	POLS [#]		REM [^]		FEM	
	Coefficient	Std. Errors	Coefficient	Std. Errors	Coefficient	Std. Errors
c	4.05* (44.91)	0.09	3.96* (57.80)	0.06	3.87* (51.2)	0.07
EF	0.005** (1.92)	0.002	-0.007** (-2.11)	0.003	-0.01* (-3.8)	0.004
LI	-0.008 (- 0.98)	0.008	0.003 (0.51)	0.007	0.006 (0.82)	0.007
PR	0.35 (1.36)	0.26	0.05 (0.16)	0.33	-0.12 (-0.28)	0.42
SO	-0.21* (-3.09)	0.06	-0.112 (-1.43)	0.08	0.05 (0.4)	0.13
CSR	0.006 (0.14)	0.04	0.04 (1.32)	0.03	0.05 (1.55)	0.03
R ²	0.20		0.06		0.78	
Adjusted R ²	0.15		0.01		0.72	
F-statistic	5.20*		1.42		12.00*	

Note(s): *, ** and *** denotes the significance level of correlation at 1%, 5% and 10%, respectively.

Parenthesis below the value of coefficients displays the value of *t*-statistics

[#] POLS is not applicable as the Breusch-Pagan test result is significant at 5 % level of significance, H_0 : POLS is appropriate.

[^] REM is not applicable as the Hausman test result is significant at 5 % level of significance, H_0 : REM is preferred.

Source: Computed from the collected secondary data using E-views 22 (student version)

The above TABLE 7 showcase the Model III, where the ESG is dependent variables without considering FS. It can be observed that Efficiency has a negative and significant effect on ESG, while Liquidity, Profitability, Solvency, and CSR have a mix effect but not statistically significant. The R² value of 0.78 suggests that the model explains a substantial portion of variation in ESG performance.

TABLE 8: Model IV

Variable	POLS [#]		REM [^]		FEM	
	Coefficient	Std. Errors	Coefficient	Std. Errors	Coefficient	Std. Errors
c	4.03* (26.86)	0.15	3.97* (16.67)	0.23	7.92* (4.17)	1.89
EF	0.005** (1.92)	0.002	-0.008** (-2.29)	0.003	-0.01* (-3.40)	0.004
LI	-0.007 (-0.95)	0.008	0.003 (0.55)	0.006	0.007 (1.07)	0.007
PR	0.37 (1.32)	0.28	0.03 (0.10)	0.34	-0.03 (-0.08)	0.42
SO	-0.20* (-3.02)	0.06	-0.12 (-1.31)	0.09	-0.01 (-0.07)	0.13
CSR	0.005 (0.10)	0.04	0.04 (1.38)	0.03	0.06*** (1.71)	0.03
LnFS	0.001 (0.16)	0.009	-0.001 (-0.06)	0.01	-0.29** (-2.13)	0.13
R ²	0.20		0.06		0.80	
Adjusted R ²	0.15		0.01		0.73	
F-statistic	4.30*		1.23		12.21*	

Note(s): *, ** and *** denotes the significance level of correlation at 1%, 5% and 10%, respectively.

Parenthesis below the value of coefficients displays the value of *t*-statistics

[#] POLS is not applicable as the Breusch-Pagan test result is significant at 5 % level of significance, H_0 : POLS is appropriate.

[^] REM is not applicable as the Hausman test result is significant at 5 % level of significance, H_0 : REM is preferred.

Source: Computed from the collected secondary data using E-views 22 (student version)

The above TABLE8 showcase the Model IV, where the ESG is dependent variables and others are independent variables along with FS. The results say that Efficiency and Firm Size have negative and significant effects, while CSR has a positive and weakly significant effect on ESG. The model explains 80% of the variation indicating good explanatory strength.

5. CONCLUSION

The findings reveal that most financial variables like efficiency, liquidity, profitability, and CSR spending shows no significant impact on firm size. However, solvency demonstrates a significant negative relationship with firm size this indicates that financially conservative firms may experience slower growth. When ESG score is included in the model the results show a significant negative effect on firm size, suggesting that ESG engagement may not immediately translate into expansion during the short term.

Further results indicate that corporate efficiency and firm size have a significant negative impact on ESG performance. Although CSR expenditure shows a positive relationship with ESG scores, the effect is statistically insignificant, implying that CSR spending alone does not ensure improved ESG performance unless it is strategically aligned with core business operations.

The study concludes that the ESG and Firm size have proportionately inverse relationship, when other variables remain constant. This implies the inverse relationship between Firm size and ESG affects the sustainability commitment of the firm and its societal practices through economic development, resources allocation, and community well-being. Firm with high ESG score tend to improve the well-being of the employee, and promotes consumption. Moreover, it has its positive impact on the society at large in reducing the pollution, waste, and ecological risk. The study suggest that the larger firm should emphasis more towards financial sustainability and long-term growth orientation, should strategically spend on CSR activities for a balance growth in the long run.

The existence of insignificant relationships in the study may be explained by the short period of analysis (2021–2025), the post-COVID adjustment phase, transitional compliance costs related to ESG implementation, and possible lag effects between sustainability initiatives and financial outcomes. Overall, the study suggests that ESG integration and financial growth may not move together in the short run and that sustainability benefits may require a longer time horizon to become visible. The researchers suggest further research may undertake disaggregated ESG score; E, S, and G and examine the relation between the Firm size for the study. In addition, a researcher may consider a different financial performance indicators for future research and establish a relation between CSR and ESG with different sectors.

REFERENCES

- Agarwala, N., Pareek, R., & Sahu, T. N. (2023). Does board independence influence CSR performance? A GMM-based dynamic panel data approach. *Social Responsibility Journal*, 19(6), 1003–1022. <https://doi.org/10.1108/SRJ-10-2020-0433>
- Bala, M. (2022). ESG Practices and Financial Performance-Empirical Evidences from Indian Companies. In Quest Journals *Journal of Research in Business and Management (Vol. 10)*. Retrieved www.questjournals.org
- Chen, Y. C., Hung, M., & Wang, Y. (2018). The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics*, 65(1), 169–190. <https://doi.org/10.1016/j.jacceco.2017.11.009>
- Cho, S. J., Chung, C. Y., & Young, J. (2019). Study on the relationship between CSR and financial performance. *Sustainability (Switzerland)*, 11(2). <https://doi.org/10.3390/su11020343>
- Dalal, K. K., & Thaker, N. (2019). *ESG and Corporate Financial Performance: A Panel Study of Indian Companies*.
- Fauzi, H., & Idris, K. M. (2009). The Relationship of CSR and Financial Performance: New Evidence from Indonesian Companies. Retrieved <http://ssrn.com/abstract=1694284>Electroniccopyavailableat:<https://ssrn.com/abstract=1694284>Electroniccopyavailableat:<http://ssrn.com/abstract=1694284>
- Joshi, B., & Joshi, H. (2024). Financial determinants of environmental, social and governance performance: Empirical evidence from India. *Investment Management and Financial Innovations*, 21(1), 12–24. [https://doi.org/10.21511/imfi.21\(1\).2024.02](https://doi.org/10.21511/imfi.21(1).2024.02)
- Kumar, P., & Firoz, M. (2022). Does Accounting-based Financial Performance. *Australasian Accounting, Business and Finance Journal*, 16(1), 41-72.
- Nenavani, J., Prasuna, A., Siva Kumar, S. N. V., & Kasturi, A. (2024). ESG measures and financial performance of logistics companies. *Letters in Spatial and Resource Sciences*, 17(1). <https://doi.org/10.1007/s12076-023-00358-4>
- Prasetya Willim, A., Studi Manajemen, P., Ekonomi Dan Bisnis, F., & Widya Dharma Pontianak, U. (2025). Analysis of ESG Disclosure, Board Diversity,

and Financial Performance on Firm Value with Firm Size Moderation. *MABIS*, 16(01).

- Putri, C. M., & Puspawati, D. (2023). The Effect of ESG Disclosure, Company Size, and Leverage On Company's Financial Performance in Indonesia. *The International Journal of Business Management and Technology*, 7. Retrieved www.theijbmt.com
- School of Business, H., & Tsoutsoura Berkeley, M. (2004). Corporate Social Responsibility and Financial Performance.
- Sharma, P., Panday, P., & Dangwal, R. C. (2020). Determinants of environmental, social and corporate governance (ESG) disclosure: a study of Indian companies. *International Journal of Disclosure and Governance*, 17(4), 208–217. <https://doi.org/10.1057/s41310-020-00085-y>
- Singh, R., & Tarkar, P. (2024). An empirical analysis on sustainable start-up: Embedding Environmental, Social and Governance (ESG) into high growth business strategy. *Brazilian Journal of Operations and Production Management*, 21(3). <https://doi.org/10.14488/BJOPM.1810.2024>
- Thakrar, H., Malwiya, S., Naik, N., Jain, D., & Parkhi, T. (2025). *ESG PERFORMANCE AND CORPORATE PROFITABILITY: EMPIRICAL EVIDENCE FROM INDIAN FIRMS*. Retrieved www.abpi.uk
- Zhou, R., Lou, J., & He, B. (2025). Greening Corporate Environmental, Social, and Governance Performance: The Impact of China's Carbon Emissions Trading Pilot Policy on Listed Companies. *Sustainability (Switzerland)*, 17(3). <https://doi.org/10.3390/su17030963>