



## The influence of corporate attributes on CSR practices

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### Abstract

The purpose of this essay is to assess how company characteristics, including market efficiency, profitability (ROA, ROE, and ROCE), leverage, and FII, affect CSR efforts. The Security & Exchange Board of India (SEBI) required the filing of such an annual Responsibility Report (BRR) which focuses primarily on CSR performance, so the paper examined the CSR disclosure practices of 10 Automobile Indian companies that are listed on the Stock Exchange (BSE) for the period 2019–2021. The data is gathered from secondary & primary sources, accordingly. To review & analyze the CSR disclosures of companies, the 2019–2021 annual reports, sustainability reports, & corporate responsibility reports of the chosen companies were retrieved from their respective websites. The results are obtained using E-view software student version 12. The empirical investigation of the relationship between independent variables (market performance, income (ROA, ROE, and ROCE), FII investment, as well as leverage) and CSR Disclosure Scores. To do this, the panel data approach is employed. In addition, the study examined the panel regression model (random and fixed model) of all equations. All equations are discovered to have a neutral connection. The study found a little but unfavorable effect of market performance just on car sector. The study found negative and significant impact of ROA, and positive and insignificant impact of ROE & ROCE in automobile companies.

**Keywords:** Corporate attributes, CSR practice, Automobile Companies, BSE

**DOI Number:** 10.14704/nq.2022.20.11.NQ66224

**NeuroQuantology 2022; 20(11): 2262-2276**

### 1. Introduction

Mutual benefit is the foundation of corporate social responsibility. Through CSR activities, businesses fulfil their moral or ethical duty to return part of the societal benefits they have received. The term "CSR" refers to the what we mean whenever we discuss mutual benefit. Through CSR initiatives, businesses have a moral or ethical duty to give back to the community through that they have benefited financially. The term "Enterprise Run Society" has become commonplace in these days of carefully orchestrated economies, and it refers to a society in which businesses manage & pay for essential public services like hospitals, schools, and other forms of social welfare. Additionally, businesses are spending money on CSR initiatives to give themselves an edge in the marketplace. To maintain profits in the face of intense competition, they are looking for new

markets in which to invest in infrastructure & provide a more supportive institutional environment for their staff (Saeed and Arshad, 2012).

Actually, the local environment including things like enough infrastructures, the right sorts & quality of education to future employees, cooperation with local distributors/suppliers, quality of institutions, legal legislation is crucial to the success of business organisations. Company philanthropy and other social & environmental efforts can have a massive effect on both the community at large and the company's bottom line (Porter, 2003).

In the 2000s, the focus on theoretical advancements of the concept and meaning of CSR turned to empirical research on the subject, and interest in CSR started to splinter into related topics including stakeholder approach, business ethics, sustainability, and corporate



citizenship. Between 2001 and 2005, the discipline was dominated by empirical research that links CSR or Corporate Social Performance to other significant variables as opposed to new CSR ideas. According to the findings, job seekers do factor CSP into their evaluations of companies, with environmental concerns, community involvement, employee satisfaction, cultural sensitivity, & product quality ranking highest.

CSR programmes benefited several sectors, including those related to teaching, art, medicine, community service, & charity. Many of these recipients became worldwide in the 1990s. The area of business practice saw the most improvements in CSR throughout the 1990s. A nonprofit organisation called Business for Social Responsibility (BSR) was founded in 1992 to represent the initiatives and experts in charge of CSR in businesses. Only a handful of the many topics contained in BSR's definition of CSR include business practices, community investment, the environmental, governance & accountability, individual rights, the market, as well as the workplace.

When talking about CSR, terms like business ethics, corporate social responsibility (csr), corporate governance, and sustainability are commonly used interchangeably. From a management, practical standpoint, BSR asserts that "CSR is viewed as a complete collection of policies, procedures, or programmes which are implemented into operations of the company, supply chains, or decision-making processes all through the enterprise." Another key trend that emerged in the 1990s & continues now is the proliferation of organisations with stellar reputations for corporate social responsibility (CSR) policies like BSR.

### 1.1 CSR Responsibility in India

Early discussions of corporate social responsibility in India focused almost exclusively on charitable giving, but the idea of

CSR is actually far more expansive than that. There is solid evidence that CSR can help meet the requirements of underdeveloped communities in developing countries. There are sufficient justifications for business to include CSR principles into their operations.

Evidences of environmental & social crises around the world make the business sector more accountable for their actions (Sharma and Dangwal, 2015). Hazardous emissions, water scarcity, energy, biodiversity, gender disparities, child labour practices, product safety, etc. are all examples of such challenges. Therefore, reporting is now emphasising non-financial procedures such as identifying, analysing, & presenting the material economic, environmental, social, & governance information rather than only the financial data. Investors & fund managers are putting money to work after factoring in this crucial piece of data (Bhanu Murthy, Bhandari, & Pandey, 2014). Corporate leadership has more duty today than ever before to dispel the Marxist assumption that business ethics is an oxymoron as 'capitalism itself tends to produce selfish, overreaching, & immoral company behaviour'. India's GDP expanded by 22.16% and its per capita income climbed by 13.88% over a 25-year period as a consequence of economic liberalisation. However, the number of individuals who live in severe poverty has not altered and the rate of unemployment has only dropped by 0.70 percent. Corporations unquestionably contributed significantly to this expansion and also have benefited greatly as a result. The affluence of the elite has increased dramatically in a liberalised Indian economy.

### 2. Literature Review

Ramdhony et al. (2022) investigated whether corporate governance & company foundations impact CSR reporting methods. It was revealed that businesses who donate to the CSR foundation frequently give more CSR-related



data. State ownership, on the other hand, has a detrimental effect on CSR reporting, whilst board independence has had no appreciable effect.

**Wenji et al. (2022)** examine the role of government incentives in CSR, by considering the volume & frequency of subsidies in addition to the industry type in a cutthroat business climate. The findings show that government subsidies significantly incentivize private companies to actively uphold their social obligations, and also that product-market competition serves as an intermediary that supports the theoretical presumption. Throughout the whole life cycle of the business, this effect is noticeable.

**Rossi et al. (2021)** studied the possible impact of CSR activities on the financial performance of ESG enterprises, with board characteristics serving as moderators. The findings of the study added a new dimension to governance research, which might provide policymakers & regulators with a valuable source of data for enhancing governance procedures to improve financial performance.

**Khudharet al. (2019)** looked on the relationship between CSR and financial performance. The study utilised data derived from a review of the relevant literature by a variety of researchers. There was a substantial beneficial association among CSR behaviour & financial success in Iraqi firms, according to the findings.

**Timbate and Park (2018)** examined the financial reporting practises of socially responsible enterprises. Information gathered from American S&P 500 companies. They discovered that those who felt strongly about doing good in the world also tended to be less likely to budget their money. As per researcher interpretation this suggests that investors are underestimating their potential gains from good CSR practises.

**Singh and Dangwal (2018)** examined how CSR Disclosure practises affect a company's financial performance. Secondary data collected from the top twenty BSE-indexed chemical businesses over a two-year period, from 2014 to 2016. The findings indicate that environment and community have a beneficial effect on ROA & ROE.

**Kelman et al. (2016)** evaluated the perspectives of CSR in Norway & Russia's Arctic petroleum business. Open-ended, semi-structured, and one-on-one interviews were used to collect data. The study suggested that people who directly benefited from the petroleum sector and who did not directly suffer negative effects were more likely to feel favourable about the industry, despite the fact that support for petroleum activities was generally strong.

**Prutina and Sehic (2016)** investigated employees' evaluations of a company's behaviour toward relevant stakeholders and the degree to which such behaviour was deemed respectable, taking into account the company image. The results indicated that employees believe their company to be socially responsible; nevertheless, perceptions varied by stakeholder group, highlighting the significance of the national business system & culture in CSR evaluation.

### 3. Statement of Problem

The purpose of this research is to examine the degree of CSR disclosure made by the selected companies and how it relates to corporate traits. Despite the clear lack of such a company's social responsibility, India's corporate sector has expanded and prospered greatly. However, the literature demonstrates that corporate governance is on the rise.

### 4. Objective

To assess how company characteristics, including market efficiency, profitability (ROA, ROE, and ROCE), leverage, and FIIs, affect CSR efforts.



**4.1 Hypothesis**

The levels of CSRD and company characteristics (market performance, profits (ROA, ROE, and ROCE), but also leverage for CSR activities of selected companies) do not significantly correlate.

**5. Research Methodology**

**5.1 Population of the study**

The study includes 149 respondents from selected companies.

**5.2 Sample Size**

The Security and Exchange Board of India (SEBI) required a proceedings of such an annual Business Responsibility Report (BRR) which focuses primarily on CSR performance, so the paper examined the CSR disclosure practises of Ten Automobile Indian Listed on the bombay Stock Stock Exchange (BSE) only for period 2019–2021.

**5.3 Data Collection Method**

Accordingly, secondary and primary sources were used to collect the data. The 2019–2021 financial records, sustainability reports, & corporate responsibility analyses of the selected companies were collected through their respective websites in order to assess and analyse all CSR disclosures of companies.

**6. Result**

**6.1 Stationarity Test of Independent and Dependent Variable**

Used this Augmented dickey Fuller (ADF) test regular method for unit root testing both independent and dependent variables of something like a chosen car for the years 2019–2020 through 2020–21, to confirm stationarity. The outcomes are displayed in Table 2.

**Table: 2 Augmented Dickey Fuller Test of Dependent and Independent Variables of Automobile Companies**

Variables	AugumntedDickey Fuller (ADF)	t-statistics	Probability
CSRD	Level	156.853	0.0000
ROA	1 <sup>st</sup> difference	81.1005	0.0001
ROE	Level	87.0475	0.0000
ROCE	Level	63.0306	0.0072
FIs	Level	64.1875	0.0005
MBV	Level	60.3002	0.0072
LVG	Level	63.0532	0.0005
LTA	Level	72.3767	0.0010
LTS	1 <sup>st</sup> difference	55.4766	0.0243

The series of CSRD, ROE, ROCE, MBV, LTA, LTS, leverage and FIs are stationary at level, while the series of ROA are stationary at 1st difference, as shown in Table 2. Using a panel estimation approach, regression & heteroscedasticity were investigated.

**6.2 Testing for Multicollinearity (VIF)**

The variance inflation factor (VIF) and tolerance were studied in this experiment. According to (Gujarati, 2014), multicollinearity is typically

seen as a serious problem when the VIF values of independent variables are larger than 10 or if the tolerance is lower than 0.10. Table 3 shows that VIF and tolerance are independent variables. In the sector under study, VIF ranged between 1.36 to 3.043 and the highest tolerance was 0.704. Therefore, there's no multicollinearity issue between variables, according to the VIF & tolerance setting.



**Table: 3 Results of Multicollinearity**

Collinearity Statistics (Automobile Companies)		
Variables	Tolerance	VIF
ROA	.645	1.473
ROE	.553	1.763
ROCE	.704	1.366
FIIIs	.326	3.043
MPF	.547	1.408
LVG	.514	1.508
LTA	.048	5.171
LTS	.071	4.406

This section examines the effect of CSRD upon financial performance utilizing CSRD as either the dependent variable and business results as the independent variable. This section explores the relationship between qualities (ROA, ROE, ROCE, Market performance, Leverage, and FIIIs) and CSRD in order to accomplish this objective. The results of multicollinearity are presented in Table 5.5, and this study reveals no multicollinearity issues in any of the selected organisations' equations. The following are the results of the analysis:

*H<sub>0</sub>: The levels of CSRD and company characteristics (market performance, profits (ROA, ROE, and ROCE), as well as leverage on CSR activities in selected companies) do not significantly correlate.*

**6.4 Model Specification**

The model's  $Y_{it}$  variable, where  $I$  stands for cross-sectional dimension &  $t$  for the time series dimension, represents the dependent variable. In the estimate model,  $X_{it}$  comprises the set of company traits (independent variables).  $\alpha$  represents the constant, where  $\beta$  represents the coefficient of attribute variables.  $\epsilon_{it}$  exemplifies the error.

$$Y_{it} = \alpha + \beta X_{it} + \epsilon_{it}$$

**6.4.1 CSR Disclosure and Market Performance of selected companies**

*H<sub>01</sub>: CSRD has no discernible influence on the market performances of a few Automobile Companies*

A regression equation  $a_{ia}$  is formulated to evaluate the impact of CSRD score and market performance (MBV) of selected automobile companies

Equation  $a_{ia}$  is as follows:

$$CSR D_{it} = \alpha + \beta_1 MBV_{it} + C_{it} + \epsilon_{it} \dots \dots \dots a_{1a}$$

The correlation matrix for the independent variable (MBV), dependent variable (CSRD), and control variables (Total sales & total assets) is presented in Table 4. The finding demonstrates a substantial and unfavorable connection between CSRD & MBV. The considerable positive association between CSRD and the logarithm of total assets (LTA) and total sales. Furthermore, the findings show that there is little association between predictors, and none of the values reaching 0.08. (Brooks, 2008).



**Table: 4 Correlation Matrix for Equation a<sub>1a</sub>**

	CSRD	MBV	LTA	LTS
CSRD	1			
MBV	-.011	1		
LTA	.053	.255**	1	
LTS	.071	.332**	.863**	1

\*\*Correlation is significant at the 0.01 level (2-tailed)

According to Table 5's findings, a random effect model is suitable for CSRD, meaning that null hypothesis can be accepted whenever the probability is higher than 0.05. The R<sup>2</sup> value for equation a<sub>1a</sub> is 0.1537, which accounts for 15.37% of the total variance in the CSRD result. The factors account for the remaining 84.63% of the total variance in the value of CSRD. Consequently, it may be inferred that market performance has no effect on the CSRD of automakers.

This dependent variable (CSRD) seems to have a variance around 0.065 percent attributable to a independent variable (MBV) and control variables, as indicated by the adjusted R2 value of 0.1537. (LTA & LTS). According to an F-statistic score of 0.6035, there is no meaningful correlation between CSRD and market performance. The autocorrelation was examined using Durbin-Watson statistics. DW has a value of 2.60, which is lower than 3. But DW = 2 and The calculated equation for regression a<sub>1a</sub> is as follows:

$$CSRD_{it} = 48.103 + (-0.560 MBV_{it}) + (-7.359LTA_{it}) + 2.075 LTS_{it} + \varepsilon_{it} + \dots a_{1a}$$

**Table: 5 Random Effect Panel Estimation for Equation a<sub>1a</sub>**

Equation	Variable	Coefficient	Standard Error	t-statistics	Probability
a <sub>1a</sub>	Constant	48.103456	21.75132	2.030650	0.0243
	MBV	-0.560045	0.396362	-0.258671	0.0656
	LTA	-7.359663	6.640075	-1.060101	0.1778
	LTS	2.075643	2.788867	0.452531	0.4635
Observation = 100			F-statistics = 0.60353		
R <sup>2</sup> = 0.153764			Prob (F-statistics) = 0.700121		
Adjusted R <sup>2</sup> = 0.06506			Hausman Test (Chi-square) = 2.31870		
Durbin Watson stat = 2.608708			Prob (Hausman Test) = 0.2200		

Note: Dependent Variable: CSRD

close to 2, the data lack autocorrelation (brook, 2008). The findings of DW indicate that the data exhibit autocorrelation.

Using a panel regression model, the influence of the independent variable of equation a<sub>1a</sub> with CSRD was investigated. The coefficient of the independent and control variables for equation a<sub>1a</sub> can be seen using CSRD also as dependent variable. Based on the markets to book value ratio, MBV has a poor and minor impact in CSRD (p-value > 0.05). Total assets, a measure of the size of the enterprises (the control variable), have a significant and negative effect overall CSRD (p-value > 0.05), but total sales have a positive and insignificant effect. The negative numbers of a regression coefficient show a negative correlation between CSRD and market-to-book value ratio. Consequently, it can be assumed that the CSRD and market-to-book value ratio have no correlation.





**6.4.2 CSR Disclosure and Profitability (ROA, ROE, and ROCE) of selected companies**

For the period 2019-20 to 2020-2021, Section IV presents the findings of a regression analysis with CSRDS as the dependent variable & profitability (ROA, ROE, and ROCE) as the independent variable. As control variables, the log values of total assets and total sales are utilized.

**CSR Disclosure and ROA of Automobile Companies**

*H<sub>02</sub>: There is no significant impact of CSR on the ROA of selected automobile companies.*

The estimated regression b<sub>1a</sub> are designed to analyse the link between the automakers' ROA and their CSR disclosure score for the years 2019–2020 to 2020–2021.

$$CSR_{it} = \alpha \beta_1 ROA_{it} + C_{it} + \varepsilon_{it} \dots \dots \dots b_{1a}$$

**Table: 6 Correlation Matrix for Equation b<sub>1a</sub>**

	CSR	ROA	LTA	LTS
CSR	1			
ROA	-.034	1		
LTA	.048	.215**	1	
LTS	.062	.321**	.760**	1

\*\* Correlation is significant at the 0.01 level (2-tailed)

The correlation matrix for the dependent variable (CSR), independent variable (ROA), & control variables (Total sales & total assets) of equation b<sub>1a</sub> is presented in Table 6. The outcomes account for the negative & statistically significant link between CSR & ROA. The positive & significant relationship between CSR, the log of total assets (LTA), and total sales (LTS). None of the values exceed 0.08, indicating that the correlation between predictors is not particularly strong (Brooks 2008).

**Table: 7 Random Effect Panel Estimation for Equation b<sub>1a</sub>**

Equation	Variable	Coefficient	Standard Error	t-statistics	Probability
b <sub>1a</sub>	Constant	22.87523	1.474811	9.03805	0.0000
	ROA	-0.008567	0.033737	-0.326703	0.5515
	LTA	-0.715303	1.426404	0.426402	0.4811
	LTS	0.031013	1.120020	0.023108	0.8617
Observation = 100			F-statistics = 16.6644		
R <sup>2</sup> = 0.463777			Prob (F-statistics) = 0.00000		
Adjusted R <sup>2</sup> = 0.431432			Hausman Test (Chi-square) = 4.374450		
Durbin Watson stat = 1.371134			Prob (Hausman Test) = 0.0284		

*Note: Dependent Variable: CSR*

According to Table 7's findings, the fixed and random model is suitable for CSR, meaning that null hypothesis can be accepted whenever the possibility is higher than 0.05. The R<sup>2</sup> value for equation b<sub>1a</sub> is 0.463, which accounts for 46.37% of the total variation in the CSR result. The factors account for the remaining 53.63% of the overall variance in the value of CSR. The modified R<sup>2</sup> value is 0.431, which indicates that 43.14 % of the dependent variable's (CSR) variance is attributable to the independent variable (ROA) & control variables (LTA & LTS).

The F-statistics value is found to be 16.6644. The autocorrelation was examined using Durbin-Watson statistics. DW has a value of 1.3711, indicating that it is close to 2. But DW = 2 and close to 2, the data lack autocorrelation (brook, 2008). According to the results of DW, there is no autocorrelation in the data.



Utilizing a random regression model, the influence of the independent variable of equation b1a with CSRD has been observed. The independent & control variable coefficients in calculation b1a are shown considering CSRD also as dependent variable. ROA calculated as net income/total assets has a negative but minor effect on CSRD (p-value > 0.05).

**6.4.3 CSR Disclosure and ROE of Automobile Companies**

*H03: There is no significant impact of CSRD on the ROE of selected automobile companies.*

For the period 2019-2020 to 2020-2021, the regression equation C<sub>1a</sub> is developed to analyse the relationship between the CSR disclosure score & ROE of automakers.

$$CSR_{it} = \alpha \beta_1 ROE_{it} + C_{it} + \varepsilon_{it} \dots \dots \dots C_{1a}$$

**Table: 8 Correlation Matrix for Equation c<sub>1a</sub>**

	CSRD	ROE	LTA	LTS
CSRD	1			
ROE	.084	1		
LTA	.048	.110**	1	
LTS	.062	.032**	.760**	1

\*\* Correlation is significant at the 0.01 level (2-tailed)

The correlation matrix for the dependent variable (CSRD), independent variable (ROA), & control variables (Total sales & total assets) of equation b1a is presented in Table 8. The outcomes account for the negative & statistically significant link between CSRD & ROE. The positive & significant relationship between CSRD, the log of total assets (LTA), and total sales (LTS).

**Table: 9 Random Effect Panel Estimation for Equation c<sub>1a</sub>**

Equation	Variable	Coefficient	Standard Error	t-statistics	Probability
C <sub>1a</sub>	Constant	51.52143	22.20100	1.136023	0.0164
	ROE	0.011106	0.017810	0.657107	0.3336
	LTA	-8.157486	6.662583	-1.081202	0.1257
	LTS	0.856112	3.102156	0.120001	0.7075
Observation = 100			F-statistics = 0.534812		
R <sup>2</sup> = 0.144686			Prob (F-statistics) = 0.764832		
Adjusted R <sup>2</sup> = -0.0074303			Hausman Test (Chi-square) = 1.553106		
Durbin Watson stat = 1.665661			Prob (Hausman Test) = 0.5338		

*Note: Dependent Variable: CSRD*

Based on Table 9's findings, it can be concluded that perhaps the fixed and random model is suitable for CSRD and the null hypothesis can be accepted whenever the probability is higher than 0.05. The R<sup>2</sup> value for equation C<sub>1a</sub> is 1.446, which accounts for 44.68% of the total variation in the CSRD result. The factors account for the remaining 55.32% of the overall variance in the value of CSRD. The modified R<sup>2</sup> value is -0.0074, and the F-statistics value is 0.534812. The autocorrelation was examined using Durbin-Watson statistics. The value of DW is 1.66, which indicates that it is close to 2. But DW = 2 & close to 2, the data lack autocorrelation (brook, 2008). The findings of DW indicate that the data exhibit autocorrelation.

Utilizing a random regression model, the influence of the independent variable of equation b1a with CSRD has been observed. The coefficients of said independent & dependent variable in equation C<sub>1a</sub> will be shown utilizing CSRD as that of the dependent variable. ROE calculated as net income/total assets has a negative but minor effect on CSRD (p-value > 0.05).





Following is the estimated regression equation  $c_{1a}$ :

$$CSR_{it} = 51.52143 + 0.011106 ROE_{it} + (-8.157486 LTA_{it}) + 0.856112 LTS_{it} + \varepsilon_{it} \dots C_{1a}$$

#### 6.4.4 CSR Disclosure and ROCE of Automobile Companies

$H_{04}$ : There is no significant impact of CSR on the ROCE of selected automobile companies.

For the period 2019-2020 to 2020-2021, the regression equation  $d_{1a}$  is developed to analyse the relationship between the CSR disclosure score & ROCE of automakers.

$$CSR_{it} = \alpha \beta_1 ROCE_{it} + C_{it} + \varepsilon_{it} \dots d_{1a}$$

**Table: 10 Correlation Matrix for Equation  $d_{1a}$**

	CSR	ROCE	LTA	LTS
CSR	1			
ROCE	.064	1		
LTA	.048	.147**	1	
LTS	.072	.014**	.735**	1

\*\* Correlation is significant at the 0.01 level (2-tailed)

The correlation matrix for the dependent variable (CSR), independent variable (ROCE), & control variables (Total sales & total assets) of equation  $b_{1a}$  is presented in Table 10. The outcomes account for the negative & statistically significant link between CSR & ROCE. The positive & significant relationship between CSR, the log of total assets (LTA), and total sales (LTS).

**Table: 11 Random Effect Panel Estimation for Equation  $a_{1a}$**

Equation	Variable	Coefficient	Standard Error	t-statistics	Probability
$d_{1a}$	Constant	56.70600	23.67412	2.735632	0.0286
	ROCE	0.025074	0.021477	1.983650	0.2704
	LTA	-7.224181	6.705763	-1.072023	0.2562
	LTS	1.182266	4.036567	0.248663	0.6046
Observation = 100			F-statistics = 0.655477		
$R^2 = 0.151083$			Prob (F-statistics) = 0.825642		
Adjusted $R^2 = -0.066071$			Hausman Test (Chi-square) = 2.23570		
Durbin Watson stat = 1.56463			Prob (Hausman Test) = 0.5141		

Note: Dependent Variable: CSR

According to Table 11's findings, a fixed effect model is applicable for CSR, which indicates that whenever the probability is higher than 0.05, the null hypothesis can be accepted. The  $R^2$  value for the equation  $c_{1p}$  is 0.151083, which accounts for 15.10% of the total variance in the CSR score. The factors account for the remaining 84.9% of the total variance in the value of CSR. The modified value of  $R^2$  is -0.066071, and the value of F-statistics is 0.6554. The autocorrelation was examined using Durbin-Watson statistics. The value of DW is 1.56, which indicates that it is close to 3. But DW = 2 or close to 2. The findings of DW indicate that the data exhibit autocorrelation.

Using a random regression model, the influence of the independent variable in equation  $d_{1a}$  with CSR has been evaluated. The coefficients of a independent & control variables of equation  $d_{1a}$  are seen using CSR as just the dependent variable. The relationship between ROCE and CSR is positive and statistically meaningful (p-value > 0.05) when ROCE is calculated by net profit pre taxes/total assets. Total assets, a measure of the firms' size (a control variable), as well as total sales (also a control variable) both have a negative and significant influence on CSR (p-value > 0.05).



The regression coefficient's negative values show a negative relationship between CSRD and ROCE, and they also show a negative relationship between the two variables. Therefore, it may be argued that the relationship between the CSRD and ROCE in vehicle businesses is neutral.

Following is the estimated regression equation  $d_{1a}$ :

$$CSR_{it} = 56.70600 + 0.025074ROCE_{it} + (-7.224181LTA_t) + 1.182266LTS_t + \varepsilon_{it} \dots d_{1a}$$

**6.4.5 CSR Disclosure and Foreign Institutional Investors (FIIs) stake of selected automobiles companies**

The regression model  $e_{1a}$  is developed to examine the relationship for both CSR disclosure score & FIIs of car businesses for the years 2019–2020 to 2020–2021.

$H_{05}$ : There is no significant impact of CSRD on the FIIs of selected automobile companies.

$e_{1a}$  equation is as follows:

$$CSR_{it} = \alpha \beta_1 FII_{sit} + C_{it} + \varepsilon_{it} \dots e_{1a}$$

**Table: 12 Correlation Matrix for Equation  $e_{1a}$**

	CSRD	FIIs	LTA	LTS
CSRD	1			
FIIs	.074	1		
LTA	.048	.673**	1	
LTS	.064	.628**	.760**	1

\*\* Correlation is significant at the 0.01 level (2-tailed)

The correlation matrix for the dependent variable (CSRD), independent variable (FIIs), & control variables (Total assets & total sales) of equation  $e_{1a}$  is displayed in Table 12. The outcomes account for the positive association between CSRD & FIIs.

**Table: 13 Random Effect Panel Estimation for Equation  $e_{1a}$**

Equation	Variable	Coefficient	Standard Error	t-statistics	Probability
$e_{1a}$	Constant	49.07544	21.03652	1.93642	0.0261
	FIIs	0.08262	0.296304	0.93742	0.5504
	LTA	-8.48621	7.038363	-1.33748	0.1115
	LTS	2.45749	2.472920	0.43372	0.4768
Observation = 100			F-statistics = 0.513600		
$R^2 = 0.140345$			Prob (F-statistics) = 0.782083		
Adjusted $R^2 = -0.080875$			Hausman Test (Chi-square) = 1.383805		
Durbin Watson stat = 2.606653			Prob (Hausman Test) = 0.5723		

Note: Dependent Variable: CSRD

The impact of the independent variable in formula  $e_{1a}$  with CSRD has already been assessed using a random regression model, as shown in Table 13. The coefficients of the independent and control variables from equation  $e_{1a}$  are shown using CSRD as such dependent variable. The impact of FIIs on CSRD is positive and substantial (p-value > 0.05), as evaluated by the proportion of FIIs in shareholding. Size of the companies (control variable) as assessed by total assets has a positive & substantial influence on CSRD (p-value > 0.05), while total sales has a negative and significant influence (p-value > 0.05). Favorable regression coefficient values indicate a positive association between CSRD & FIIs. Positive regression coefficient values also indicate a positive relationship between CSRD & FIIs. Therefore, it is reasonable to believe that the CSRD & FIIs have a neutral relationship with automobile businesses.



Following is the estimated regression equation  $e_{1a}$ :

$$CSR_{it} = 49.07544 + 0.08262FII_{it} + (-8.48621LTA_t) + 2.45749LTS_t + \varepsilon_{it} \dots e_{1a}$$

**6.4.6 CSR Disclosure and Leverage of automobiles companies**

$H_{06}$ : There is no significant impact of CSR on the LVG of selected automobile companies.

The estimated regression  $f_{1a}$  are developed to examine the relationship among CSR disclosure score & FII of car businesses for the years 2019–2020 to 2020–2021.

$$CSR_{Dit} = \alpha + \beta_1LVG_{it} + C_{it} + \varepsilon_{it} \dots f_{1a}$$

Table 14 presents the correlation matrices for the total assets, total sales, independent variable (LVG), and dependent variable (CSR) of equation  $f_{1a}$ . The results are responsible for the favourable correlation between CSR and LVG. Both CSR and also the log value of total sales (LTS), along with CSR or each log value of total assets, have positive and significant connections (LTA).

**Table: 15 Correlation Matrix for Equation  $f_{1a}$**

	CSR	LVG	LTA	LTS
CSR	1			
LVG	-.164	1		
LTA	.048	.002**	1	
LTS	.062	.077**	.835**	1

\*\* Correlation is significant at the 0.01 level (2-tailed)

According to Table 15's findings, the random effect model works well for CSR, which means that once the probability is higher than 0.05, the null hypothesis can be accepted. The  $R^2$  value for equation  $f_{1a}$  is 0.1635, which accounts for 16.35% of the total variance in the CSR value. The remaining 83.65 % of the variance in CSR's value is attributable to the variables. The modified value of  $R^2$  is -0.0573, and the value of F-statistics is 0.6327. The autocorrelation was examined using Durbin-Watson statistics. The value of DW is 2.78, which indicates that it is close to 3. But DW = 2 & close to 2, the data lack autocorrelation (brook, 2008). The findings of DW indicate that the data exhibit autocorrelation.

**Table: 16 Random Effect Panel Estimation for Equation  $f_{1a}$**

Equation	Variable	Coefficient	Standard Error	t-statistics	Probability
$f_{1a}$	Constant	50.30703	22.66407	2.512250	0.0226
	LVG	-1.316305	0.805878	-1.445521	0.0126
	LTA	-6.762474	6.635228	-1.037463	0.2025
	LTS	0.770034	2.876342	0.111373	0.7136
Observation = 100			F-statistics = 0.632754		
$R^2 = 0.1635624$			Prob (F-statistics) = 0.670104		
Adjusted $R^2 = -0.0573632$			Hausman Test (Chi-square) = 1.348242		
Durbin Watson stat = 2.782652			Prob (Hausman Test) = 0.5806		

Note: Dependent Variable: CSR

Be using a random regression model in Table 16 to assess the impact of the dependent variable on equation  $f_{1a}$  with CSR. The coefficient of the independent and response variables in equation  $f_{1a}$  are shown utilizing CSR as the dependent variable. The relationship between Debt/Equity and CSR is negative & insignificant ( $p$ -value > 0.05). Size of companies (control variable) as evaluated by total assets has a negative & insignificant effect on CSR ( $p$ -value > 0.05), whereas total sales has a positive & insignificant effect ( $p$ -value > 0.05). Positive regression coefficient values indicate a positive association



exists between CSR & LVG, whilst negative regression coefficient values indicate a negative relationship exists between CSR & LVG. Therefore, it may be argued that the relationship between CSR and LVG in vehicle firms is neutral.

Following is the estimated regression equation  $f_{1a}$ :

$$CSR_{it} = 50.30703 + (-1.316305LVG_{it}) + (-6.762474LTA_{it}) + 0.770034LTS_{it} + \varepsilon_{it} \dots f_{1a}$$

### 7. Findings and Conclusion

This study examines the relationship among CSR disclosure scores (CSRDS) as well as selected corporate variables, including market efficiency, profits (ROA, ROE, & ROCE), FIIs stake, & leverage, for Indian listed automobile businesses between 2019-2020 and 2020-21. As the data for the selected year possess both cross-sectional & time series features, the panel data approach is utilised. The OLS estimation method is employed for this purpose. The following are the findings:

- Use the Augmented Dickey Fuller (ADF) testing to ascertain the stationarity of the initial data series, adhering to the standard unit root testing methodology. The results of every factor for the chosen organisations from 2019–2020 to 2020–21 are displayed. The results indicate that the data series for CSR, ROA, ROE, ROCE, Leverage, FIIs, and the log value of total assets are stationary at the second difference, ROCE and leverage at the first difference, and ROA & ROE at the level of chosen public banks. CSR, ROE, ROCE, MBV, LVG, LTA, & FIIs series are stationary at level; ROA and LTS series are stationary at 1st difference.
- The empirical investigation of the relationship involving CSR Disclosure Scores and unrelated variables (market sentiment, economics (ROA, ROE, and ROCE), FIIs stake, or leverage) for the years 2019–20 to 2020–21. To do this, the panel data approach is employed. In addition, the study examined the panel regression model (random and fixed model) of all equations. All equations are discovered to have a neutral connection. The study found that the automobile sector was negatively and only slightly impacted by market performance. The study found negative and significant impact of ROA, and positive and insignificant impact of ROE & ROCE in automobile companies.

**Table: 17 Panel Result CSR and Corporate Attributes of Automobile Companies**

Variables	Hypothesis	Coefficient	t-value	p-value	Accept/Reject
<b>Individual Relationships</b>					
<b>CSR-MBV</b>	H <sub>01</sub>	-0.560045	-0.258671	0.0656	<b>Accepted</b>
<b>CSR-ROA</b>	H <sub>02</sub>	-0.008567	-0.326703	0.5515	<b>Accepted</b>
<b>CSR-ROE</b>	H <sub>03</sub>	0.011106	0.657107	0.3336	<b>Accepted</b>
<b>CSR-ROCE</b>	H <sub>04</sub>	0.025074	1.983650	0.2704	<b>Accepted</b>
<b>CSR-FIIs</b>	H <sub>05</sub>	0.08262	0.93742	0.5504	<b>Accepted</b>
<b>CSR-LVG</b>	H <sub>06</sub>	-1.31630	-1.445521	0.0126	<b>Accepted</b>

**Note:** MBV (Market Performance), ROA (Return on Assets), ROE (Return on Equity), ROCE (Return on Capital Employed), FIIs (Foreign Institutional Investors) and LVG, (Leverage)



## 8. Future Scope

The study examines the level of CSR disclosure made by Indian businesses from 2019–20 to 2020–21. To increase the reliability of the findings, future research might analyse the level of CSR disclosure utilizing time series data or a longitudinal manner. The enterprises in India are the topic of this study. Future studies might conduct a cross-sectional analysis of both India and other countries. In the future, studies from industrialised and developing nations might be compared in a further attempt to better comprehend the nature and breadth of CSRD and its connection to financial performance (FP). Three financial performance indicators—ROA, ROE, and ROCE—are the only ones covered by this study. Future studies could use additional controls and more financial performance measures (both accounting-based and market-based performance, for example, to better comprehend the connection among CSRD & financial performance.

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