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DO THE ATTRIBUTES OF CORPORATE GOVERNANCE AFFECT THE ENVIRONMENTAL REPORTIN PRACTICES IN INDIA?

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Abstract

This paper aims to understand how corporate governance can impact on environmental performance. It also establishes the relation between environmental performance and corporate governance. For this analysis we collect the data from the top 10 power sector companies listed by National Stock Exchange (NSE) in India over the period of 5 years from 2018-2022. This study used statistical tools like descriptive statistics, correlation matrix, and regression models to justify the objectives. Our results show that the number of members in the board and CEO duality roles was not the important for enhancing environmental performance. However, the gender diversity among board members and top executives had a positive impact on environmental performance.

Keywords: environmental performance, corporate governance, gender diversity, board members, top executives.

1. INTRODUCTION:

Firms are under immense pressure to collaborate with key stakeholders to limit pollutions in today's heightened climate change debate. Corporations are under increasing pressure to go green and reduce their negative environmental impact. With an increase in general stakeholder awareness of firms' environmental performance and the associated risks of non-eco-friendly corporate decisions, firms are under increasing pressure from stakeholders to carefully assess the risks and consequences of environmental decisions and raise their level of environmental responsibility. Organisational environmental practises have become a critical issue in society, with a wide spectrum of stakeholders expecting environmental openness. Corporations must take the essential steps towards a sound corporate governance structure in order to

enhance their environmental performance, which could considerably aid in addressing this global crisis. The board of directors of a corporation has the ability to improve an organization's environmental performance because it is at the core of all key decisions made by the company. In this study, we examine the significance of different board traits in connection to environmental performance, with the goal of investigating the impact of corporate governance attributes on business environmental performance in India.

Both agency theory and resource dependence theory can be used to explain the relationship between corporate governance qualities and environmental performance. According to agency theory, a competent corporate governance structure can reduce information asymmetry between the agent and the principal. A board with more independent directors, for example, is seen to be better able to balance the firm's financial and non-financial aims that arise during complex environmental decision-making. Similarly, a more diverse board structure, such as the addition of female directors to the board, has been demonstrated to increase knowledge of and attention to the firm's social and environmental challenges. The board of directors, according to resource dependence theory, plays a crucial role in facilitating a firm's external dependency and resource acquisition ability. A corporate board can guide or assist management in using resources efficiently, which can help them obtain legitimacy from the necessary stakeholders. As a result, the board's qualities are expected to have a significant impact on a firm's environmental performance. To the best of our knowledge, no research has looked into the impact of board characteristics on corporate environmental performance in the context of Indian power sectors. As a result, by addressing this, we want to enhance important understanding in this field.

2. THEORETICAL FRAMEWORK

The principal (shareholders) and the agent (management) have asymmetric interests, according to agency theory. **(Rubino & Napoli 2020)**. The theory's proponents say that a conflict of interest exists between shareholders and management since the latter's self-serving tendencies undermine the former's long-term gain. **(De Villiers et al. 2011)**. Management may prioritise short-term profitable initiatives or investments above long-term value-enhancing investments in order to maximise management compensation, hence increasing agency costs for shareholders. Previous research has discovered that company board features can influence such agency expenses. **(Daily et al. 2003; Hillman & Dalziel 2003; Lu & Wang 2020)**. An active and watchful board, for example, may ensure that management makes right and effective strategic decisions and does not waste firm resources by regularly reviewing management's actions. (**Lu & Wang 2020; McNulty & Pettigrew 1999)** Similarly, independent board members can effectively oversee the operations of agents or management (Roberts, J 2005). Because of their independence from day-to-day corporate operations, independent directors can assure high levels of openness in managerial choices and actions. **(Fernández & Sarria 2018)**. Similarly, when there is a separation of duties between the CEO and the board chairman, openness in management strategies is assured, showing that CEO duality increases a firm's agency cost **(Liao et al. 2015)**. According to these

studies and conclusions, a more independent board, both in terms of directorship structure and CEO duality, may lead to an improvement in a firm's environmental performance.

The theory of resource dependence acknowledges a corporate board's power to support a firm's external dependency and resource acquisition, and (Peffer 1987) identifies four methods in which boards might assist enterprises in achieving these benefits. Boards of directors can (a) provide advise or guidance, (b) enable information flow between a firm's internal and external environments, (c) provide or facilitate resources, and (d) assist in gaining legitimacy. Studies on company performance and board size have discovered a favourable relationship between the two, showing that a larger board provides a business with more available resources by assembling diverse counsel, competences, and expertise on the board. **(Dalton et al.1999; Sanders & Carpenter 1998)**. Similarly, boards with more skilled directors were shown to support and begin effective strategies more frequently (Carpenter & Westphal 2001; Kor & Sundara murthy 2008). Again, a gender-diverse board can foster varied perspectives, attitudes, and perceptions, ultimately strengthening a firm's human and intellectual resources (Huse & Grethe 2006; Adams et.al. 2015). As a result, if a large board of varied and competent persons is established, it could be assumed that the incremental resources a firm could obtain, through expertise and other resources, are likely to contribute to the firm's improved environmental performance.

The literature has a wide range of research that investigates the impact of corporate governance qualities on environmental performance. Many research employ worldwide samples (Walls et al. 2012), but others employ country-specific samples (Peters ; Romi 2013). The prior literature focuses on the relationship between firm characteristics and greenhouse gas emission disclosures (Chithambo et al. 2014; Matsumura et al. 2013; Nishitani et al. 2011), as well as policy adoption and carbon emissions disclosures (Anwar et al. 2020; Rahman et al. 2019). Several studies look at the relationship between certain corporate governance characteristics and disclosures on business environmental performance and carbon emissions. **(Ben-Amar et al. 2015; Ben-Amar et al. 2014; Biswas et al. 2018)**. The literature has examined board size, board independence, board diversity, CEO duality, and the environmental management committee among other corporate governance attributes. For example, boards with higher proportions of independent directors are reported to be more capable of balancing a firm’s financial and non-financial goals during complex environmental decision-making **(Liao et al. 2015; Pucheta-Martínez et al. 2021)**. Similarly, female directors are reported to be more considerate of social issues and environmental concerns in the companies they serve **(Cordeiro et al. 2019; Hillman et al. 2007; Torchiaet al. 2011).**

3. HYPOTHESIS DEVELOPMENT

3.1 Board Size and Environmental Performance

According to (Ahmed et al. 2006; Dey 2008), smaller boards have a greater impact on communication efficiency, ultimately leading to greater accountability and commitment, whereas larger boards negatively impact the effectiveness of a firm's governance, as reported by (De Andres et al. 2005; Prado-Lorenzo & Garcia-Sanchez 2010). Smaller board sizes, on the other hand, have been found in a few studies to have a

negative impact on several components of a board. According to (Guest 2009), smaller boards have less diverse knowledge than larger boards. Furthermore, (John & Senbet 1998) add to this argument by arguing that a smaller board may limit the members' ability to handle other issues related to social and environmental conflict. Furthermore, larger boards have a wider range of education and experience than smaller ones (Adams 2015). Larger boards, according to (Chang 2015), promote better disclosure of financial, social, and environmental information to individuals, lowering uncertainty. A broader board structure allows for a higher diversity of background expertise, diversity, and experience, which can be advantageous in achieving a variety of exceptional ideas concerning environmental and social involvement (Anderson 2011). Because of the different backgrounds of the members of a larger board, the members are likely to be devoted to corporate sustainability. **(Lu & Herremans 2019; De Villiers et al. 2011)** Both reported that larger boards had a considerable impact on a firm's social and environmental performance since larger boards are connected with greater CSR disclosure. Similarly, (Arena et al. 2014) discovered a link between board size and environmental scores. Following these findings and recommendations, we claim that a larger board will have more resources in the form of professionals to address various parts of the business; hence, the board has a better chance of supporting improved environmental performance. We hypothesize the following:

H1: Board size is positively impact on environmental performance of a firm.

3.2 CEO Duality and Environmental Performance

There is evidence that having a CEO as the chair of the board jeopardises the board's independence by limiting openness and accountability (Liao et al. 2015). When the same individual serves as both chairperson and CEO, a conflict of interest occurs, and the line between management and control becomes blurred (Fama, and Jensen 1983). Because of the CEO's multiple functions, his or her decisions may not be in the best interests of the stakeholders. Based on these arguments, the presence of a dual CEO-chair is likely to make the board less likely to approve immediate investments in environmental opportunities with long payback periods if the CEO is faced with a compelling motive to maximise short-term financial gains at the expense of strategic investments in environmental opportunities. As a result, (Finkelstein et al. 2009) contends that the combination of the two responsibilities demonstrates the CEO's undue influence over the board. When the positions of board chair and CEO are separated, managerial responsibility becomes more efficient, agency costs are reduced, and performance increases. The more independent the board, the more probable it is to have an impact on the organization's environmental performance. (Husted & de Sousa-Filho 2019) discovered that CEO duality had a marginally negative influence on social disclosures but had no effect on environmental or governance disclosures. (Arena et al. 2014) discovered a link between CEO dualism and environmental performance. Other study, however, showed that CEO duality had no substantial impact on sustainability initiatives (Liao et al. 2015; Krause et al. 2014). Given the foregoing, we hypothesise that

H2: CEO duality is positively impact on environmental performance of a firm.

3.3 Board Diversity and Environmental Performance

A diverse board of directors guarantees that management takes better judgements and enables problem-solving capacity, as well as a stronger and more competitive company strategy and better social and environmental decisions (Katmon ; Mohamad et al. 2017). More female directors on a board help to improve a company's intellectual resources (Huse & Grethe Solberg 2006). A corporation can get access to resources it previously lacked by hiring more women with strong knowledge and abilities in natural environments (Kim & Starks 2016). Empirical evidence regarding environmental performance and gender diversity is equivocal. According to several studies, board diversity has little or no effect on a company's **(Glass et al. 2015)**. However, a research of 296 U.S. enterprises conducted between 2008 and 2012 (Kassinis & Vafeas 2006) discovered a favourable relationship between gender diversity and environmental performance. Furthermore, according to (Cordeiro et al. 2019), gender diversity on boards is favourably connected with an organization's environmental performance. Following these reasons, we propose the following hypotheses:

H3: Board gender diversity is positively impact on environmental performance.

4. DATA AND METHODOLOGY

4.1 DATA AND SAMPLE

The sample consisted of Top 10 Indian power sector companies listed by National Stock Exchange. The data are obtained from the annual report of sample power sector companies over the period of 5 years from 2018-19 to 2022-23. The determinants of environmental disclosure and attributes of corporate governance were selected from the past literatures.

4.2 DEPENDENT VARIABLE:

- Environmental Performance (ENVP)

4.3 KEY INDEPENDENT VARIABLES:

- Board Size (BS)
- CEO Duality (CEOD)
- Board gender diversity (BG)

4.4 CONTROL VARIABLES

- Size (SIZE)
- Leverage (LEV)
- Return on Assets (ROA)
- Return on Capital Employed (ROCE)
- Profit (PF)

4.5 ECONOMETRIC SPECIFICATION

This study uses panel data regression analysis to examine the influence of corporate governance characteristics, company size, leverage and profitability on environmental performance. The equitation of the regression model is as follow.

- $ENVP = \alpha + \beta 1BS + \beta 2CEOD + \beta 3BG + \beta 4SIZE + \beta 5LEV + \beta 6ROA + \beta 7ROCE + \beta 8PF + e$

4.6 Variables Description:

Table No-1

	Dependent Variable	Formulas
I.	Environmental Performance (ENVP)	Total Environmental protection cost
	Independent Variables	
l.	Board Size (BS)	Log(Total no. of directors)
II	CEO Duality (CEOD)	CEO and Chairman same than 1 otherwise 0.
lll.	Board Gender Diversity (BG)	Percentage of female directors on board
	Control Variables	
l.	Size (SIZE)	Log(Total Assets)
ll.	Leverage (LEV)	Outsider debt/Total Equity
lll.	Return on Assets (ROA)	Net profit/ Total Assets
lV	Return on Capital Employed (ROCE)	Net profit/ Total Capital Employed
V	Profit (PF)	Log (Total profit)

Source: Self- Compiled data

5. STATISTICS SUMMARY AND EMPIRICAL RESULTS

Table No-2

Descriptive Statistics

Date: 04/11/23 Time: 23:50Sample: 2018 2022

	ENVP	BS	CEOD	BG	SIZE	LEV	ROA	ROCE	PF
Mean	0.6381	1.0290	0.9000	0.1890	4.8966	4.0052	0.0389	0.0427	3.3850
Median	0.5211	1.0395	1.0000	0.1666	4.7652	1.8960	0.0367	0.0516	3.2221
Maximum	1.8645	1.2041	1.0000	0.5000	6.8025	77.2092	0.1203	0.1394	5.6102
Minimum	-1.6989	0.7781	0.0000	0.0625	4.1321	0.3239	0.0031	-0.0831	1.9289
Std. Dev.	0.7378	0.1513	0.3030	0.1252	0.7319	3.9282	0.0252	0.0465	0.7432
Skewness	-0.5372	-0.5345	-2.6666	1.3957	1.4976	6.2250	1.1538	-0.4552	1.0507
Kurtosis	3.4626	3.0287	8.1111	4.2701	4.4628	41.9783	4.3437	3.6002	4.6063
Probability	0.2404	0.1138	0.0000	0.0000	0.0000	0.0000	0.0005	0.2897	0.0006
Sum	31.9061	51.4511	45.0000	9.4503	244.8310	200.2645	1.9452	2.1351	169.2529
Sum Sq. Dev.	26.6790	1.1220	4.5000	0.7684	26.248	5851.886	0.0312	0.1060	27.0702
Observations	50	50	50	50	50	50	50	50	50

Source: Self- Compiled data

Table no-2 describes that the sample variables under the study such as ENVP, BS, CEOD, BG, SIZE, LEV, ROA, ROCE and PF. Mean of ENVP, BS, CEOD, BG, SIZE, LEV, ROA, ROCE and PF is 0.63, 1.02, 0.90, 0.18, 4.89,4.00, 0.03, 0.04 & 3.38 respectively. ENVP, BS, CEOD, BG, SIZE, LEV, ROA, ROCE and PF is 0.52, 1.03, 1.00, 0.16, 4.76, 1.89, 0.03, 0.05 & 3.22 respectively. It indicates that the data is symmetric among the variables in a given series of data, where mean and median are more or less equal or close to each other. It signifies that variables are symmetric in nature. The Standard deviation of ENVP, BS, CEOD, BG, SIZE, LEV, ROA, ROCE and PF variables are 0.73, 0.15, 0.30, 0.12, 0.73, 3.92, 0.02, 0.04 & 0.74 respectively. It indicates that the data point tend to be very closure to their mean. It shows that there is a consistency of data. In the above table the kurtosis values for ENVP, BS, CEOD, BG, SIZE, LEV, ROA, ROCE and PF are greater than 3. So all the variables are highly peaked and called leptokurtic. It indicates that the distribution has heavier tails than the normal distribution. That means variances within the observation are not so high.

Table No-3

Correlation Matrix

	ENVP	BS	CEOD	BG	SIZE	LEV	ROA	ROCE	PF
ENVP	1.00000	-0.05294	0.06604	-0.420087	0.35988	0.02597	-0.01447	0.00241	0.36076
BS	-0.05294	1.00000	-0.38961	-0.034035	-0.35642	-0.26743	0.05154	0.15438	-0.30528
CEOD	0.06604	-0.38961	1.00000	0.340145	0.24119	-0.01851	-0.01040	0.49321	0.30106
BG	-0.42008	-0.03403	0.34014	1.000000	-0.09455	-0.07851	-0.04298	0.12261	-0.07251
SIZE	0.35988	-0.35642	0.24119	-0.094555	1.00000	0.02329	-0.21572	-0.28568	0.90030
LEV	0.02597	-0.26743	-0.01851	-0.078513	0.02329	1.00000	-0.10071	-0.39164	0.00720
ROA	-0.01447	0.05154	-0.01040	-0.042988	-0.21572	-0.10071	1.00000	0.30969	0.18254
ROCE	0.00241	0.15438	0.49321	0.122617	-0.28568	-0.39164	0.30969	1.00000	-0.12676
PF	0.36076	-0.30528	0.30106	-0.072517	0.90030	0.00720	0.18254	-0.12676	1.00000

Source: Self- Compiled data

Table no.-3 reveals that the explanatory variables like CEOD, SIZE, LEV, ROCE and PF are positively associated with dependent variable ENVP. Which indicates that increase of SIZE, LEV, ROCE and PF leads to increase of ENVP and vice- versa. Whereas BS, BG and ROA are negatively associated with ENVP. It shows that increase of BS, BG and ROA leads to decrease of ENVP and vice-versa.

Table No-4

Regression Results of Dependent Variable: ENVP

Dependent Variable: ENVP Method: Panel Least SquaresDate: 04/12/23 Time: 14:33 Sample: 2018 2022
Periods included: 5
Cross-sections included: 10
Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BS	0.231981	0.575807	0.402879	0.6891
CEOD	0.137505	0.505790	0.271862	0.7871
BG	-2.577919	0.841140	-3.064791	0.0038
SIZE	-0.179763	0.353041	-0.509183	0.6133
LEV	0.001905	0.009833	0.193707	0.8473
ROA	-5.962726	5.606836	-1.063474	0.2936
ROCE	1.758652	3.379268	0.520424	0.6055
PF	0.529713	0.412577	1.283911	0.2062

R-squared	0.318163	Mean dependent var	0.638122
Adjusted R-squared	0.204523	S.D. dependent var	0.737882
S.E. of regression	0.658113	Akaike info criterion	2.146766
Sum squared resid	18.19073	Schwarz criterion	2.452690
Log likelihood	-45.66916	Hannan-Quinn criter.	2.263264
Durbin-Watson stat	1.053450		

Source: Self- Compiled data

Table no- 4 indicate that, R^2 in the regression analysis highlights the degree of change in dependent variable due to a percentage change or variation in independent variables. Here in the above table the R^2 is 0.3181, which indicates that the dependent variable environmental performance is determined to the extent of 31.81% by independent variables of corporate governance attributes which is taken for the study. Here the coefficient of determinants indicates that there is moderately positive correlation among the independent variables.

Durbin Watson (DW) test is conducted to find out the existence of autocorrelation among the residual variables from regression analysis. Here in the above table the value of DW test is 1.05, which is within the acceptable range of 0 to 4. Thus it shows that there is no auto correlation among the liquidity management determinants, i.e. among the independent variables and is a positive sign for our study.

Here the probability value of board diversity is 0.003 which is less than the critical value i.e 0.01 % level of significant. Hence H3 is confirmed. However the probability value of board size and CEO duality are 0.68 and 0.78 respectively which is greater than the critical value at 1% level of significant, so both H1 & H2 are rejected.

6. CONCLUSIONS

In this study, we look at how different aspects of corporate governance affect environmental performance in India. We employ a number of corporate governance variables to analyse the influence on environmental performance. These include the size of the board, gender diversity, and CEO duality. Using data from the top ten power sector industries as a sample size from 2018 to 2022, we discovered that CEO duality increases a firm's environmental performance, whereas board size and gender diversity are unrelated to environmental performance. Board diversity has a substantial impact on environmental performance. While CEO duality and board size have no bearing on environmental performance. By focusing on numerous parts of governance processes, our research opens the door to understanding the environmental performance of Indian enterprises. As a result, while drawing conclusions for Indian enterprises whose governance mechanisms help to control environmental performance to some extent. This research can help policymakers conceive and design board structures to address the worldwide problem of environmental deterioration. Another potential policy implication of our findings is that governments can develop mandatory rules for the formation of a separate environmental management committee to guarantee that firms commit to investing more in environmental protection costs.

In our study, there is potential for future investigation. First and foremost, the data are collected over a specified time frame, allowing for a longitudinal study. Second, this study did not incorporate other corporate governance qualities such as the existence of an environmental committee, board independence, meeting frequency, board member age, and so on. Finally, this study is limited to the Indian environment. It could refer to the global context.

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