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UNDERSTANDING THE MEDIATING ROLE OF STRATEGY IN FOSTERING CORPORATE SUSTAINABILITY

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Abstract: The study delves into a newly bulging stream of corporate governance with respect to sustainability. The increasing prevalence of sustainability committees or sustainability officers in companies and the changing orientation of leaders towards sustainability is bound to manifest into the company strategies. Against this backdrop, the study investigates how such sustainability related governance influences the sustainability performance of companies by considering the mediating role of strategy. Panel data analysis is performed on the sample of 103 Indian companies for the period 2016-17 to 2021-22. The results reveal that sustainability related governance leads to better strategy index and this further enhances corporate sustainability performance. These empirical findings substantially contribute to the existing literature as the role of strategy has been undermined in previous research. Moreover, this study attempts to facilitate practitioners, policy makers and regulators in better configuration of organizations into the sustainability milieu.

Keywords: Corporate sustainability performance, sustainability strategy, sustainability related governance, sustainability committee, sustainability officer, Global Reporting Initiative (GRI)

1. Introduction

Corporations are being negatively critiqued amidst the escalating controversies of child labor, emission scandals, oil spills, frauds and bankruptcy that persistently highlight upon their negligence in taking responsibility and accountability for their actions (Eweje, 2011; Fu, 2019; Kilic, 2021). These laxities have amplified the stakeholders' pressure on business leaders to operate sustainably (Kilic, 2021; Kumar *et al.*, 2022; Deloitte CXO Sustainability Report, 2023).Gradually companies are becoming aware of the reputational and financial risks that sustainability entails and recognizing it as a strategic imperative proven to generate substantial long-term benefits (Lopez *et al*., 2007; Dienes 2016; Qian *et al*., 2016). Corporate sustainability has been defined by the World Business Council for Sustainable Development (2002) as the obligation of business to improve the quality of life of the societies and communities surrounding them, advancing the economy and facilitating sustainable development. However, the foundation for sustainability in any organization is laid down by the top management because it takes a certain kind of leadership to transform business into a sustainable one (Eweje, 2011). The Deloitte CXO Sustainability Report (2023) also asserts that 68% of the global executives feel pressurized by the stakeholders to incorporate sustainability. Thus, companies today are widening the

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ambit of their existing governance structures by extending beyond the corporate governance mechanism and formulating board-level committees on sustainability or appointing a sustainability officer to provide specialized oversight (Eweje, 2011; Burke *et al*., 2019). Adoption of such sustainability related governance exhibits the formal and visible commitment of companies and reflects upon the strategic importance being given to it that further manifests into the organization's orientation and strategies (Eweje, 2011; Kilic, 2021). Despite being voluntary in nature, this corporate governance practice is being adopted extensively all across the globe like in the UK, 83% of the top 100 companies have sustainability representation in leadership, followed by Taiwan, France (75 percent), and South Korea (73 percent) (KPMG Survey of Sustainability Reporting, 2022).

However academically, the extant literature on corporate governance and sustainability is gradually gaining momentum in this new landscape of governance. Prior literature has intensively explored into the board characteristics that can influence non-financial reporting and performance of companies (Dienes, 2016; Llorens *et al*., 2019; Velte and Satwinoga, 2020). But as sustainability is gaining its place in the governance structure, it has provided researchers with a new avenue to determine the drivers of corporate sustainability. Thus, the focal point of recent studies has shifted from board characteristics to the presence of specialized board level committees and officers on sustainability, incessantly proving that such sustainability related governance enhances the sustainability performance of companies(Jarbouiet *al*., 2022; Biswas *et al*., 2018; Dixon-Fowler *et al*., 2017; Fu, 2019; Velte, 2020; Kanashiro and Rivera, 2019). However, these studies have failed to recognize the importance of strategy that is an outcome of such specialized governance and that orients the organization towards enhanced sustainability performance (Shaukat *et al*., 2016; Orazalin, 2020). As asserted by Eweje, (2011), sustainability committees enhance the sustainability orientation and help in shaping effective strategies for sustainable business (Galbreath 2010; Galpin *et al*., 2015).Against this backdrop, the present study intends to assess the impact of sustainability related governance on the sustainability performance of companies by deliberating the mediating effect of sustainability strategy, thereby building on the study of Orazalin (2019) by juxtaposing the study in the Indian context. India seems to be an appealing avenue for this research as the regulatory and institutional environment are striving to keep pace with the continuing changes in stakeholder expectations (Jarboui *et al*., 2022; Kumar *et al*., 2022). Various reforms regarding corporate governance and non-financial reporting have been conceded like the amendment of the Companies Act (2013) to mandate corporate social responsibility (CSR), introduction of business responsibility reports (BRR) in 2012 as a listing requirement by Securities and Exchange Board of India (SEBI) which transformed into Business Responsibility and Sustainability Reports (BRSR) by 2021. The Desirable Corporate governance code (1998) and committee recommendations from Narayana Murthy Committee (2003), Uday Kotak Committee (2017) and such are being provided from time to time, to raise the paradigm of corporate governance in India (Jarboui *et al*., 2022; Kumar *et al*., 2022). This makes the present study worthwhile as the findings would help in better alignment of policies and regulations to the international and national milieu.

Thus, the paper is organized to demonstrate the literature and theories underlining the study and providing basis for formulation of hypotheses. The next section entails the research methodology. Further the analysis, results and findings are elaborated. Lastly, the paper is concluded with limitations of the study and scope for research in the future.

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2. Theoretical background

The recent decade has seen a surge in the research work pertaining to corporate governance and sustainability. Corporate governance theories that have been broadly used as foundation in prior studies are agency, resource dependence, stakeholder, legitimacy and upper echelons theory (Hussain *et al*., 2018; Orazalin, 2020). Since the relationship between corporate governance and sustainability is very complex, studies suggest that a single theory perspective cannot completely comprehend it (Hussain *et al*., 2018, Mahmood and Orazalin, 2017;Orazalin, 2020). Thus, this study takes a multi theory perspective and builds on the resource dependence, stakeholder and upper echelons theory (Kilic, 2021; Orazalin 2020). The resource dependence theory asserts that the strategic mix of knowledge, ability, experience and connections that each director brings to the board affects the decisions or actions taken by them in order to govern the company (Pfeffer and Salancik, 1978; Pfeffer and Salancik, 2003). This explains the position of directors in devising sustainability related governance and strategies in the organization. The stakeholder theory provides that companies are accountable for their actions to the various stakeholders (Freeman, 1984; Freeman *et al*., 2010). Thus, companies incorporating sustainability into its governance is a sign of that accountability. The upper echelons theory postulates that the leadership in an organization is a predictor of the strategies and decisions of that organization (Hambrick and Mason, 1984; Forbes and Milliken, 1999; Hambrick, 2007). This theory suggests that sustainability related governance will lead to an effective sustainability strategy as leadership articulates the orientation of the organization. Therefore, this theoretical assortment lays down the premise of the study to evaluate how sustainability related governance affects sustainability performance through a sustainability strategy.

3. Literature review

Previous literature on corporate sustainability primarily used the agency, legitimacy, stakeholder and resource dependence theory as base and examined the board attributes like board diversity, board size, board independence, board tenure, etc. to ascertain the drivers of sustainability reporting in companies (Amran *et al.*, 2014; Bhatia and Tuli, 2017; Shamil *et al.*, 2014; Mahmood and Orazalin, 2017; Wang, 2017; Kumar *et al.*, 2022).But as the company leaders and executives started realizing the strategic importance of sustainability, the governance structures were also modified to reflect that. Consequently, the more recent literature has moved from board characteristics to other measures of corporate governance like formation of a sustainability committee (Michelin and Parbonetti, 2012; Amran *et al*., 2014; Biswas *et al*., 2018; Mahmood *et al*., 2018; Burke *et al*., 2019; Kilic, 2021; Jarboui*et al*., 2022) or the impact of audit committee (Al-Shaer and Zaman, 2018; Kaur *et al*., 2023) or presence of a sustainability officer (Henry *et al*., 2019; Fu *et al*., 2020; Kanashira and Rivera, 2019; Peters *et al*., 2019; Velte and Stawinoga, 2020). However, most of these studies measure the direct effect and ignore the process or mechanism of governance that is enabling the sustainability performance to improve. Few studies that have analyzed this relation as a mechanism have used the presence of a sustainability committee or officer as a moderator in studying the effect of various variables on non-financial performance (Dixon-Fowler *et al*., 2017; Garcia-Sanchez *et al*., 2019; Fu *et al*., 2020). But all of the previous studies have failed to recognize the mediating role of an unobserved strategy that could have facilitated such superior performance (Galbreath, 2010; Eweje, 2011; Galpin *et al*., 2015). Shaukat *et*

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al. (2016) and Orazalin (2020) have tried to comprehend this mediating role and provide empirical evidence that underscores this divergence in the past literature but since their focus has been developed countries like the UK, this paper intends to extend their research and explore this nexus in the ambit of a developing country like India where this aspect is unexplored. The extant literature in Indian context is quite behind in comparison to developed countries as sustainability related governance in Indian companies is fundamentally unexplored (Jarboui *et al*., 2022). The prior studies concentrated on exploring the relation between sustainability and corporate attributes like firm size, age, ownership structure, industry type (Jha and Rangrajan, 2020; Aggarwal and Singh, 2018; Bhatia and Tuli, 2017);or sustainability and board attributes like board independence, board meetings, board size, etc. on sustainability (Aggarwal and Singh, 2018;Kumar, 2020; Kumar *et al*., 2022). However, few studies analyzing governance related to sustainability are that of Jarboui *et al*. (2022), that look into the characteristics of sustainability committee of Indian companies and Kaur *et al* (2023) that analyses the impact of audit committee on sustainability disclosure of Indian companies. But these studies also suffer from the same limitation as that of the foreign studies because they assess the direct effect and don't consider the mechanism which enhances corporate sustainability. Hence, this study delves into the fairly unexplored governance mechanism of Indian companies by considering the mediating role of sustainability strategy in affecting the sustainability performance.

4. Hypotheses Development

4.1 Sustainability related governance and sustainability performance

Taking from the perspectives of stakeholder theory, it can be asserted that by establishing accountability, superior performance can be attained. Thus, by employing a sustainability committee or a sustainability officer to oversee the sustainability related matters of the company, the board acknowledges sustainability into its governance structure. The concerned empirical literature has explored this relation and depict a positive association between such governance and non-financial performance (Mahmood *et al*., 2018; Biswas *et al*., 2018;Fu*et al*., 2020; Kanashira and Rivera, 2019; Peters *et al*., 2019; Kilic, 2021; Jarboui*et al*., 2022). However, some studies discovered negative or no impact of sustainability governance on sustainability disclosures (Michelon and Parbonetti, 2012; Amran *et al*., 2014; Qian *et al*., 2016; Burke *et al*., 2019). Thus, basing on the stakeholder theory, the study tests whether companies can attain superior sustainable performance by creating accountability through specialized governance structures related to sustainability. The first hypothesis is formulated as follows:

H1: Sustainability related governance positively affects corporate sustainability performance

4.2 Sustainability related governance and sustainability strategy

As the resource dependence theory states that the knowledge and awareness of the leaders help organizations in facing any upcoming changes in the business environment. Moreover, the upper echelons theory also predicates that the effectiveness of strategy and decisions rely on the characteristics of the leaders. Thus, the organizational commitment towards sustainability and the strategies for incorporating it are dependent on the orientation of the board of directors. The directors as a resource play a central role in formulating effective strategies pertaining to sustainability (Mackenzie, 2007;

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Galbreath, 2010; Eweje 2011; Galpin *et al*., 2015; Orazalin, 2020). Thus, based on this conception it can be hypothesized that:
H2: Sustainability related governance positively affects sustainability strategy

4.3 Sustainability strategy and corporate sustainability performance

The Galbreath (2010) provides empirical evidence that establishes strong nexus between organizational strategy and firm's social performance. Shaukat *et al*. (2016) also purport that effective CSR strategies lead to superior non-financial performance. Thus, taking insight from the stakeholder theory, it can be proposed that strategies focused on better implementation of sustainability will lead to better sustainable performance. Hence, the following is hypothesized:
H3: Sustainability strategy positively affects corporate sustainability performance

4.4 Sustainability related governance, sustainability strategy and corporate sustainability performance

Connecting these three aspects of governance, strategy and sustainability, prior studies concerning developed countries have established that specialized governance structures lead to development of effective sustainability strategy which further leads to superior sustainability performance (Mackenzie, 2007; Shaukat *et al*., 2016; Biswas *et al*., 2018). This notion is widely supported by the multiple theories underlying this study. As suggested by the upper echelons theory, strategy is the predictor of the ability of an organization's leadership. Moreover, the resource dependence theory contends that the effectiveness of a strategy depends on the assortment of resources being offered by the leaders. Further, as posited by the stakeholder theory, the leaders or directors who are governing the implementation of sustainability in the organization will be held accountable for the overall sustainable performance. Thus, this study tries to ascertain whether sustainability strategy facilitates such specialized governance in enhancing the sustainability performance of companies. Therefore, the following hypothesis is developed:
H4: Sustainability strategy mediates the positive relationship between sustainability related governance and corporate sustainability performance

5. Data and Methodology

5.1 Sample

The sample selection procedure began with the top 500 companies listed on BSE from FY 2016-17 to FY 2021-22. There were 274 companies that remained in the top 500 throughout this study period. Out of these, 168 companies were voluntarily reporting on sustainability using various available frameworks like the SASB or IIRC or GRI. The study examined companies reporting on sustainability based on the globally renowned GRI guidelines, thus, the sample comprised of 104 companies, out of which one company had to be left out due to inadequate data. Therefore, the final sample comprised of 103 companies spread across 15 different types of industries as shown in Table 1. The sustainability reports, ESG reports or integrated reports were accessed through the company websites. The data regarding governance was extracted from the annual reports, corporate governance reports, sustainability reports, integrated annual reports and the respective company websites. The financial data was collected from

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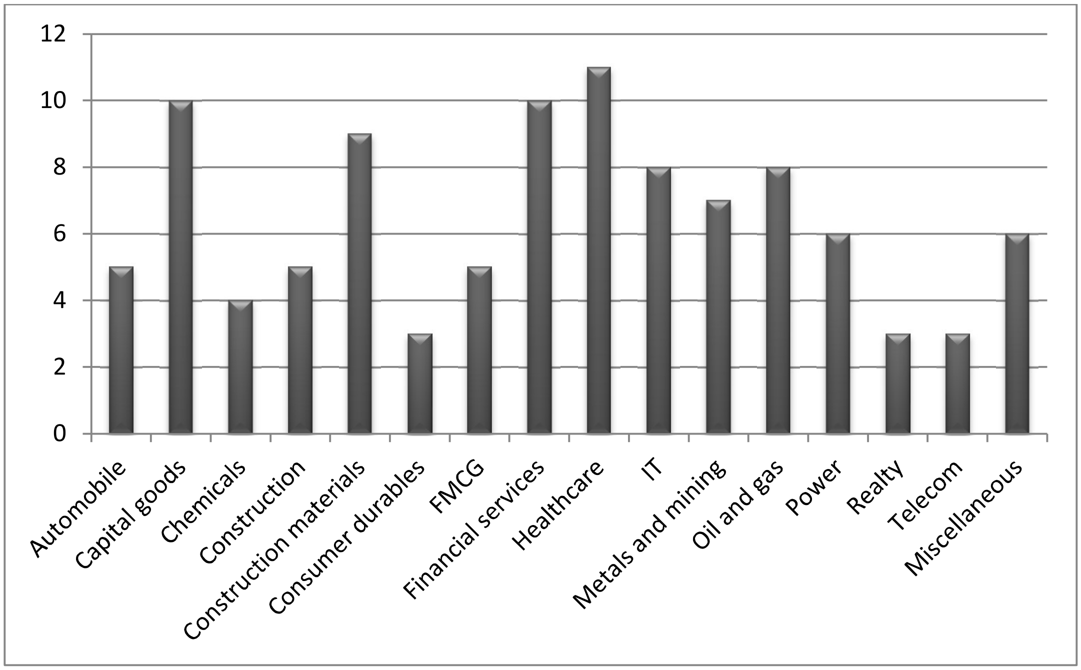
the CMIE database.

Table1. Sample distribution by type of industry



5.2 Variables

5.2.1. Dependent Variable

The dependent variable of the study is Corporate Sustainability Performance (CSP). It is measured using an index that is formulated based on the GRI guidelines that came into effect during the period of study i.e. 2016-2022. The index consists of 70 indicators covering six dimensions of the triple bottom line viz. economic, environment, human rights, labor practices, and society and product responsibility. This index was used to conduct content analysis of the sustainability reports of the sample companies(Amran *et al*., 2014; Bhatia and Tuli, 2017; Aggarwal and Singh, 2018; Kumar 2020; Kumar *et al.*, 2022), and the quality of reporting on each of the indicators was measured using a 4-point rating scale that has been developed based on the non-binary scoring systems used in previous studies (Papoutsi and Sodhi, 2020; Yadava and Sinha, 2018; Laskar and Maji, 2018). Table 2 shows the rating scale developed by the authors for this study.

Table1. Four-point rating scale for content analysis

Rating	Description
0	is assigned when there is no disclosure regarding the indicator
1	is assigned when the indicator is partially disclosed with descriptive statement
2	is assigned when the indicator is partially disclosed with descriptive statement along with some numerical support
3	is assigned when the indicator is fully disclosed with descriptive statement and numerical support
Source: The Authors’	

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5.2.2. Mediator

The Sustainability Strategy is the mediating variable and is measured using a sustainability strategy index (SSI). The index is developed to comprehensively encompass various actions or strategic moves of the company that could better integrate an organization towards sustainability to reflect the sustainability orientation of the company and its executives. Thus, based on the index used in similar studies of Galbreath, (2010), Shaukat *et al*., (2016), Orazalin, (2020), the index comprises of four factors:

a. Preparation of sustainability report
b. External assurance of sustainability report
c. Integration of financial and non-financial reports
d. Sustainability orientation of the companies

Every company is scored out of four for the presence of each of the factors and the total value of the index is calculated in percentage form ranging from 0 to 100.

5.2.3. Independent Variable

Sustainability related governance (SRG) is the independent variable and will be comprehensively measured using three types of governance that were observed in the sample companies viz board-level sustainability companies (NTPC, BPCL, Infosys), sustainability council with functional heads (Pidilite) or existence of a chief sustainability officer or head (SBI, Shree Cement). Thus, companies having any of these three types of governance were scored as one and companies without such governance were rated as zero. However, such a binary scale has been prevalent in prior studies to indicate the existence of sustainability committee only (Al-Shaer and Zaman, 2018; Biswas *et al*., 2018; Burke *et al*., 2019; Orazalin, 2020; Kilic, 2021), but the authors have improvised upon it to appropriately align it to the Indian context.

5.2.4. Control Variables

In order to account for the compounding effect of other variables that could influence the corporate sustainability performance and sustainability strategy, some control variables are introduced into the study. As identified in the previous research, some firm specific variables that need to be controlled for are firm size, firm age, profitability, leverage(Shamil *et al.*, 2014; Al-Shaer and Zaman, 2018; Biswas *et al*., 2018; Burke *et al*., 2019;Llorens *et al*., 2019; Jarboui *et al*., 2022; Kumar *et al*., 2022). Moreover, certain corporate governance variables like board independence, board size and board meetings can also influence upon these variables and should be controlled(Al-Shaer and Zaman, 2018; Biswas *et al*., 2018; Burke *et al*., 2019; Orazalin, 2020; Jarboui *et al*., 2022).

6. Research Methodology

Drawing upon the theory of Baron and Kenny (1986) to assess the mediating role of a variable, there are three vital pre-requisites. First and foremost, the independent variable (sustainability related governance) should have a significant relation with the dependent variable (corporate sustainability performance). Secondly, the independent variable should significantly affect the mediating variable (sustainability strategy). Lastly, on inclusion of both the variables (independent and mediator)in the

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model, the mediator should show significant effect and the coefficient of independent variable should reduce. Further, this study employs the panel data regression model using the STATA 14.2 software to investigate the effect of sustainability related governance on corporate sustainability performance through sustainability strategy. The research models proposed are as follows:

Model 1.

$$CSP_{it}=\beta_0 + \beta_1 * SRG_{it} + \beta_2 * FS_{it} + \beta_3 * Prof_{it} + \beta_4 * Lev_{it} + \beta_5 * FA_{it} + \beta_6 * BS_{it} + \beta_7 * BI_{it} + \beta_8 * BM_{it} + \mu_{it}$$

Model 2.

$$SSI_{it}=\beta_0 + \beta_1 * SRG_{it} + \beta_2 * FS_{it} + \beta_3 * Prof_{it} + \beta_4 * Lev_{it} + \beta_5 * FA_{it} + \beta_6 * BS_{it} + \beta_7 * BI_{it} + \beta_8 * BM_{it} + \mu_{it_0}$$

Model 3.

$$CSP_{it}=\beta_0 + \beta_1 * SSI_{it} + \beta_2 * SRG_{it} + \beta_3 * FS_{it} + \beta_4 * Prof_{it} + \beta_5 * Lev_{it} + \beta_6 * FA_{it} + \beta_7 * BS_{it} + \beta_8 * BI_{it} + \beta_9 * BM_{it} + \mu_{it}$$

As the study is being done on panel data, it is important to study the firm specific effect and time effect that is symbolized by i and t respectively in the equation. Moreover, the error term μ_{it} is also made to account for errors varying across time and firms simultaneously. The other variables in the equation are explained in detail in Table 3.

Table 3. Operationalization of variables

Variables	Acronym	Operationalization
Dependent Variable		
Corporate Sustainability Performance	CSP	It is calculated by dividing each company's sustainability reporting score by the total score of 210 (highest rating of 3*70 indicators) and is expressed in percentage form
Mediating Variable		
Sustainability Strategy Index		
Independent Variable	SSI	It is calculated as per the index developed by the authors and is calculated as a percentage
Sustainability Related Governance	SRG	It is scored in binary form where 1 is assigned for presence of any kind of sustainability governance and 0 otherwise (Sustainability committee/ sustainability officer/ sustainability council)
Control Variables		

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Firm Size	FS	Natural logarithm of total assets
Leverage	Lev	Debt/Equity
Profitability	Prof	Ratio of net earnings after tax upon total assets
Firm Age	FA	Natural logarithm of number of years from the date of establishment of the company and the study period (2017-2022)
Board Size	BS	Total number of directors on the board
Board Independence	BI	Total number of independent directors on the board
Board Meetings	BM	Total number of board meetings held during the year

Source: The Authors'

7. Analysis and Results

The analysis begins with computing descriptive statistics of the variables being used in the study, as depicted in Table 4. The corporate sustainability performance ranges from 87% to 0% which implies that it is still in the process of gaining prominence among Indian companies. Subsequently, the sustainability strategy is also being adopted at the same rate ranging between 100% and 0%. Furthermore, the control variables pertaining to firm show that the average firm size is 12.21; leverage is 0.63 which shows the sample companies have sound financial position. The firm age ranges between 0.69 and 4.87 with mean value of 3.78 implying that the sample mostly consists of older companies. The descriptive statistics of board characteristics show that the companies have an average board size of 10 with generally 5 independent directors.

Table 4. Descriptive Statistics

Variables	Obs	Mean	Std Dev	Min	Max
CSP	618	28.76	25.89	0.00	86.67
SSI	618	57.56	32.84	0.00	100.00
SRG	618	0.39	0.49	0.00	1.00
FS	618	12.21	1.80	5.97	17.73
Prof	618	7.88	8.25	-13.79	71.74
Lev	618	0.63	1.04	0.00	8.19

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FA	618	3.78	0.57	0.69	4.87
BS	618	10.27	2.65	0.00	22.00
BI	618	5.11	1.83	0.00	11.00
BM	618	6.91	3.18	0.00	26.00

Moreover, t-test was undertaken to check for any significant difference in the sustainability performance and strategy of companies with and without sustainability related governance. Table 5 depicts the results showing that companies with such a governance have performance mean value of 32.26 as compared to 23.68 and strategy index averages at 64 in comparison to 48.21 where both are significantly different (p-value=0.00). This shows that sustainability related governance enhances the sustainability performance and also helps in formulating better sustainability strategy.

Table 5. t-test to compare CSP and SSI of companies with and without SRG

	CSP with SRG	**CSP without SRG**
Mean	32.26	23.68
Difference in means	8.58***	
p-value	0.00	
	SSI with SRG	**SSI without SRG**
Mean	64.00	48.21
Difference in means	15.79***	
p-value	0.00	

Further, to identify the potential multi-collinearity problem in the data, Pearson's correlation and VIF was used which revealed the correlations as provided in Table 6 and Table 7.High correlation exists between governance and sustainability performance at 0.578. On the other hand, sustainability governance and strategy have correlation of 0.444 which is also high. Since, none of the variables have VIF near 10, it can be certainly said that there is no multi-collinearity issue in the analysis.

Table 6. Pearson correlation matrix

Variables	CSP	SRG	SSI	FS	Prof	Lev	FA	BS	BI	BM
(1) CSP	1.000									
(2) SRG	0.298	1.000								

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(3) SSI	0.578	0.444	1.000							
(4) FS	0.268	0.245	0.443	1.000						
(5) Prof	0.011	-0.048	-0.045	-0.261	1.000					
(6) Lev	-0.031	0.072	-0.015	0.304	-0.384	1.000				
(7)FA	0.147	-0.044	0.032	0.149	0.035	-0.088	1.000			
(8) BS	0.252	0.043	0.170	0.241	0.066	-0.170	0.181	1.000		
(9) BI	0.064	-0.066	0.074	0.005	0.139	-0.142	0.131	0.678	1.000	
(10) BM	0.218	0.186	0.184	0.418	0.019	0.045	0.006	0.209	-0.091	1.000

Table 7. Variance inflation factor

	VIF	1/VIF
BS	2.35	.425
BI	2.146	.466
Firmsize	1.897	.527
SSI	1.537	.651
BM	1.377	.726
Lev	1.367	.732
SusGov	1.287	.777
Prof	1.248	.802
FirmAge	1.078	.928
Mean VIF	**1.587**	

To overcome the heteroskedasticity and autocorrelation problems, the standard errors were clustered to reveal the regression results as shown in Table 8. The Hausman test was performed to determine an appropriate test for the study, whether fixed effects (FE) or random effects (RE)regression. Since, the p-value=0.00 confirmed significant differences between the FE and RE coefficients for all the regression models, FE model was considered better. Thus, the empirical results for all the regression models are presented in Table 8.

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Table 8. Panel regression analysis

	Model 1		Model 2		Model 3	
	CSP	***p*-value**	**SSI**	***p*-value**	**CSP**	***p*-value**
SSI					.404	0***
SRG	9.994	0***	22.835	0***	.763	.769
FS	13.283	.002***	33.554	0***	-.281	.941
Prof	-.019	.939	.182	.535	-.093	.656
Lev	-2.494	.284	-7.668	.006***	.606	.748
FA	2.601	.588	18.964	.076*	-5.065	.467
BS	.291	.739	-.385	.678	.447	.592
BI	-.708	.485	.068	.951	-.735	.444
BM	-.733	.091*	-1.222	.046**	-.239	.542
Constant	-139.678	.009***	-417.072	0***	28.917	.538
R-squared	0.095		0.322		0.306	
Hausman Test	21.434		74.711		18.002	
P-value	.006		0		.035	

****** p<.01, ** p<.05, * p<.1***

The results of Model 1 specify that the sustainability performance is significantly influenced by sustainability related governance (p-value=0) which is consistent with the findings of Dixon-Fowler *et al*.(2017), Biswas *et al*. (2018)and Kanashiro and Rivera (2019). Subsequently, the results of Model 2 signify that sustainability strategy is also positively influenced by sustainability related governance at a statistically significant level (p-value=0). This positive impact corroborates with the assertions of Mackenzie (2007) and Peterson *et al*. (2007). These two findings support Hypothesis 1 and Hypothesis 2. Further, results of Model 3 provide support to Hypothesis 3, as sustainability performance is also positively influenced by sustainability strategy (p-value=0). The findings of this model also suggest that when both the variables, SRG and SSI are incorporated into the model, the coefficient of SRG drops from 9.994 to 0.763 as compared to Model 1 and becomes statistically insignificant (p-value=0.769). This evidence precisely proves that mediating effect exists in the proposed research model as per the suggestion of Baron and Kenny (1986) in their classical approach to mediation. As confirmed by the results of the above regression models, sustainability strategy mediates the relation between SRG and CSP. Hence, Hypothesis 4 also stands accepted.

The results pertaining to control variables show that firm size and board meetings significantly influence the sustainability performance and strategy. This substantiates the conception that larger firms feel greater pressure from stakeholders and are more concerned towards their non-financial performance. The outcome of Model 2 also reflects that leverage and firm age also affect the formulation of sustainability strategy. Thus, the overall findings provide sufficient evidence to support the various propositions of the study whilst upholding the theoretical foundations. As sustainability governance positively influences sustainability strategy and performance, it corroborates with the resource

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dependence and upper echelons theory that posit that superior and specialized governance lead to effective strategies that enhance the overall sustainability performance.

6.1. Additional Analysis

In order to establish the magnitude and importance of mediation effect, Sobel's test is conducted to test the significance of the mediation effect. Table 9 reveals that complete mediation exists between the variables under study. Further analysis was done using the Zhao *et al*. (2010) approach wherein the Monte Carlo test confirms the existence of full mediation in this relationship revealing that about 83 % of the effect of SRG on CSP is mediated by SSI.

Table 9. Mediating effect of Sustainability Strategy

	Model: SRG → CSP
Direct effect	2.724
Indirect effect	13.135
Total effect	15.858
Proportion of total effect that is mediated	0.828 or 82.8%
Sobel's test	13.135***
Monte Carlo test	13.124***

****significant at 1% level*

The study also considers the potential effect of endogeneity as the relation between sustainability governance, strategy and performance is highly interconnected. There is strong possibility of confounding effect of various unobserved variables that can impact upon all the three variables under study. Thus, the study applies generalized method of moments (GMM) to address the probable endogeneity in the study. As seen in Table 10, the variables exhibit significant associations similar to that of the fixed effects regression results. Moreover, the Arellano Bond and Hansen test statistics prove that the endogeneity issue has been addressed appropriately. This also proves that the main findings do not suffer by endogeneity.

Table 10. GMM results of corporate sustainability performance

	Model 1		**Model 2**		**Model 3**	
	CSP	***p*-value**	**SSI**	***p*-value**	**CSP**	***p*-value**
SSI_Lag			0.704	0.00***		
SSI					0.093	0.014***
CSP_Lag	0.747	0.000***			0.725	0.000***
SRG	0.068	0.018***	3.915	0.033***	0.681	0.707

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FS	-0.153	0.736	2.158	0.000***	-0.362	0.584
Prof	0.099	0.199	-0.009	0.902	0.092	0.316
Lev	0.065	0.908	-1.945	0.017***	0.151	0.770
FA	0.683	0.610	-1.093	0.387	0.612	0.698
BS	0.044	0.896	-0.697	0.094*	0.174	0.619
BI	0.626	0.071	1.389	0.013***	0.266	0.465
BM	-0.019	0.932	-0.178	0.384	0.025	0.914
Arellano-Bond (AR-2)		0.618	0.613		0.704	
Hansen test p-value		0.3715	0.3715		0.6690	

****** p<.01, ** p<.05, * p<.1***

7. Findings and Discussion

The study first analysed whether there is any difference in the sustainability performance of companies led by sustainability related expertise or not. The results show the presence of a significant difference, thus maintaining the assertions of stakeholder theory that companies with specialized governance related to sustainability enhance such non-financial performance (Mahmood et al., 2018; Biswas et al., 2018;Fu et al., 2020; Kanashira and Rivera, 2019; Peters et al., 2019; Kilic, 2021; Jarbouiet al., 2022). However the results also contradict with studies that show negative or no significant difference (Michelon and Parbonetti, 2012; Amran et al., 2014; Qian et al., 2016; Burke et al., 2019). Further, the study also determined whether sustainability strategies built by companies with sustainability led governance are more effective than the companies without any such specialized governance. The results support the views of resource dependence and upper echelons theory and provide assertion that companies with specialized governance structures related to sustainability like a sustainability officer or a sustainability committee or any kind of leadership that has expertise related to sustainability are able to devise better strategies for incorporating sustainability, thus corroborating with the results of previous such studies (Mackenzie, 2007; Galbreath, 2010; Eweje 2011; Galpin et al., 2015; Orazalin, 2020). Moving on to the main research question of the study, the results find that SRG significantly and positively affects the CSP which supports the findings of prior research (Dixon-Fowler *et al*., 2017; Biswas *et al*.,2018; Kanashiro and Rivera, 2019), thus supporting the first hypothesis. The second hypothesis also stands accepted as the analysis reveals that SRG leads to better strategies for sustainability (Mackenzie, 2007; Peterson *et al*., 2007). Moreover, better strategies also lead to better sustainability performance in companies, providing evidence to accept the third hypothesis. This provides further assertion to test the mediation effect of strategy in this positive association between SRG and CSP. Additional analysis to substantiate the mediation effect also showed consistent results, proving support for the acceptance of the last hypothesis and proving the assertions of the three theoretical underpinnings of stakeholder, resource dependence and upper echelons theory (Orazalin, 2019). Thus, specialized governance leads to formation of better strategies to enhance the corporate

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sustainability performance. With the mediation effect accounting to about 83%, it provides sufficient evidence to policymakers and practitioners in India, that having sustainability officers or committees facilitates better strategies of corporate sustainability. Moreover, the indicators in the SSI provide with key factors that can be incorporated by companies to lead to better CSP like external assurance of sustainability reports, incorporation of sustainability into the vision and mission statements of the company that publically display the orientation of the company, integrating the financial and non-financial statements further reflect on the importance given to non-financial performance by a company. Thus, these findings provide key insights to better incorporate sustainability into an organization and align to the international milieu of sustainability reporting.

8. Conclusion

As sustainability is gaining prominence among corporations, creating an appropriate infrastructure to embed it into the corporate culture is still a challenge for the executives. Thus, this study attempted to provide a governance mechanism which can help them in incorporating sustainability. The past literature has incessantly established sustainability related governance to be a predictor of enhanced non-financial performance. However, the intrinsic role of an effective strategy has been widely ignored in prior research. But as demonstrated by the empirical evidence of this study around 83% of the effect of governance on sustainability performance is mediated by strategy. Thus, companies with sustainability related governance are capable of gauging better strategies that further enhance the corporate sustainability performance. This gradual development of sustainability orientation in the organization leads to better embeddedness among employees and eventually attracts potential customers and investors in the wake of rising awareness about ethical investment. Thus, such studies not only facilitate the corporate executives but also provide reinforcements to the regulators and policymakers to forge better rules and regulations to mandate such practices by taking forward the global concern of sustainability. However, the study endures a few research constraints that can convert into opportunities for future research. First, the sample consists of stock listed companies as it is easy to collect their data and reports, however, this can lead to bias towards large companies as they might be engaging into sustainability due to other pressures of litigation or public perception. Thus, future studies should look into the practices of smaller companies that are free from such pressures. Secondly, future studies can incorporate other mediating or moderating variables to better understand the governance behind sustainability performance. Finally, extant literature in this new landscape of governance and sustainability is more oriented towards developed countries. Therefore, future research should replicate such studies in other emerging and developing nations.

References

Aggarwal, P., & Singh, A. K. (2018). CSR and sustainability reporting practices in India: An in-depth content analysis of top-listed companies. *Social Responsibility Journal*.

ISSN:1624-1940
DOI 10.6084/m9.figshare.26201828
http://magellanes.com/

Al-Shaer, H., & Zaman, M. (2018). Credibility of sustainability reports: The contribution of audit committees. *Business Strategy and the Environment, 27*(7), 973–986

Amran, A., Lee, S. P., & Devi, S. S. (2014). The influence of governance structure and strategic corporate social responsibility toward sustainability reporting quality. *Business Strategy and the Environment*, *23*(4), 217–235. https://doi.org/10.1002/bse.1767

Aparna Bhatia, Siya Tuli. (2017). Corporate attributes affecting sustainability reporting: An Indian perspective. *International Journal of Law and Management*, *59* (3)

Baron, R., & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research. *Journal of Personality and Social Psychology, 51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Biswas, P. K., Mansi, M., & Pandey, R. (2018). Board composition, sustainability committee and corporate social and environmental performance in Australia. *Pacific Accounting Review, 30*(4), 517–540. https://doi.org/ 10.1108/PAR-12-2017-0107

Burke, J. J., Hoitash, R., &Hoitash, U. (2019). The heterogeneity of board- level sustainability committees and corporate social performance. *Journal of Business Ethics, 154*(4), 1161–1186. https://doi.org/10.1007/ s10551-017-3453-2

Dienes, D., Sassen, R., & Fischer, J. (2016). What are the drivers of sustainability reporting? A systematic review. *Sustainability Accounting, Management and Policy Journal*, *7*(2), 154–189. https://doi.org/10.1108/SAMPJ-08-2014-0050

Dixon-Fowler, H. R., Ellstrand, A. E., & Johnson, J. L. (2017). The role of board environmental committees in corporate environmental performance. *Journal of Business Ethics, 140*(3), 423–438. https://doi.org/ 10.1007/s10551-015-2664-7

Eweje, G. (2011). A Shift in corporate practice? Facilitating sustainability strategy in companies. *Corporate Social Responsibility and Environmental Management, 18*(3), 125–136. https://doi.org/10.1002/csr.268

Forbes, D. P., & Milliken, F. J. (1999). Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. *Academy of Management Review, 24*(3), 489–505. https://doi.org/ 10.2307/259138

Freeman, R. E. (1984). Strategic management: A stakeholder approach. Boston: Pitman.

Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & de Colle, S. (2010). Stakeholder theory: The state of the art. Cambridge: Cambridge University Press.

Fu, R., Tang, Y., & Chen, G. (2020). Chief sustainability ofcers and corporate social (Ir)responsibility. *Strategic Management Journal, 41*(4), 656–680.

Galbreath, J. (2010). Corporate governance practices that address climate change: An exploratory study. *Business Strategy and the Environment*, *19*(5), 335–350. https://doi.org/10.1002/bse.648

Galpin, T., Whittington, J. L., & Bell, G. (2015). Is your sustainability strategy sustainable? Creating a culture of sustainability. *Corporate Governance (Bingley)*, *15*(1), 1–17. https://doi.org/10.1108/CG-01-2013-0004

ISSN:1624-1940
DOI 10.6084/m9.figshare.26201828
http://magellanes.com/

Garcia-Sanchez, I. M., Nazim, H., & Martinez-Ferrero, J. (2019). An empirical analysis of the complementarities and substitutions between efects of CEO ability and corporate governance on socially responsible performance. *Journal of Cleaner Production. 215*, 1288–1300.

Global Reporting Initiative. (2020, January 05). GRI and sustainability reporting. Retrieved from https://www.globalreporting.org/information/sustainability-reporting/Pages/gri standards.aspx

Global Reporting Initiative. (2017). *Mapping G4 to the GRI Standards*. *1*, 1–6. https://www.globalreporting.org/standards/media/1098/mapping-g4-to-the-gri-standards-disclosures-full-overview.pdf

GRI. (2021). *Consolidated Set of the GRI Standards*. https://www.globalreporting.org/

GRI. (2013). *G4 Sustainability Reporting Guidelines*. https://www.globalreporting.org/

GRI. (2020). Consolidated set of GRI Sustainability Reporting standards.

Hambrick, D. C. (2007). Upper Echelons Theory: An update. *Academy of Management Review, 32*(2), 334–343. https://doi.org/10.5465/AMR. 2007.24345254

Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The organization as a reflection of its top managers. *Academy of Management Review, 9*(2), 193–206. https://doi.org/10.5465/AMR.1984.4277628

Henry, L. A., Buyl, T., & Jansen, R. J. G. (2019). Leading corporate sustainability: The role of top management team composition for triple bottom line performance. *Business Strategy and the Environment*, *28*(1), 173–184. https://doi.org/10.1002/bse.2247

https://www.stata.com/statalist/archive/2011-03/msg00091.html

Hussain, N., Rigoni, U., & Cavezzali, E. (2018). Does it pay to be sustainable? Looking inside the black box of the relationship between sustainability performance and financial performance. *CorporateSocial Responsibility and Environmental Management*, *25*(6), 1198–1211.

Jarboui, A., Dammak Ben Hlima, N., & Bouaziz, D. (2023). Do sustainability committee characteristics affect CSR performance? Evidence from India. *Benchmarking*, *30*(2), 628–652. https://doi.org/10.1108/BIJ-04-2021-0225

Jha, M. K., & Rangarajan, K. (2020). The approach of Indian corporates towards sustainable development: An exploration using sustainable development goals based model. *Sustainable Development* , 1-14.

Kanashiro, P., & Rivera, J. (2019). Do chief sustainability ofcers make companies greener? The moderating role of regulatory pressures. *Journal of Business Ethics, 155*(3), 68

Kaur, C.,Barin, A. & Sapra, R. (2023). Quality of sustainability disclosure: Measurement and its relation to audit committee attributes. *IUP Journal of Accounting Research & Audit Practices. 22*(2).

ISSN:1624-1940
DOI 10.6084/m9.figshare.26201828
http://magellanes.com/

Kilic, M., Uyar, A., Kuzey, C., & Karaman, A. S. (2021). Drivers and consequences of sustainability committee existence? Evidence from the hospitality and tourism industry. *International Journal of Hospitality Management*, *92*(October 2020), 102753. https://doi.org/10.1016/j.ijhm.2020.102753

KPMG International. (2022). *Big Shifts, Small Steps: Survey of Sustainability Reporting 2022*. *October*, 1–81.

Kumar, K. (2020). Emerging phenomenon of corporate sustainability reporting: Evidence from top 100 NSE listed companies in India. *Journal of Public Affairs* .

Kumar, K., Kumari, R., Nandy, M., Sarim, M., & Kumar, R. (2022). Do ownership structures and governance attributes matter for corporate sustainability reporting? An examination in the Indian context. *Management of Environmental Quality: An International Journal*, *33*(5), 1077–1096. https://doi.org/10.1108/MEQ-08-2021-0196

Laskar, N., & Maji, S. G. (2018). Disclosure of corporate sustainability performance and firm performnance in Asia. *Asian Review of Accounting*. https://doi.org/10.1108/ARA-02-2017-0029

Lopez, V., Garcia, A., & Rodriguez, L. (2007). Sustainable Development and Corporate Performaance: A study based on the Dow Jones Sustainability Index. *Journal of Business Ethics ,75*, 285-300

Mackenzie, C. (2007). Boards, incentives and corporate social responsibility: The case for a change of emphasis. *Corporate Governance: An International Review, 15*(5), 935–943. https://doi.org/10.1111/j.1467- 8683.2007.00623.x

Mahmood, Z., Kouser, R., Ali, W., Ahmad, Z., & Salman, T. (2018). Does corporate governance afect sustainability disclosure? A mixed methods study. *Sustainability, 10*(1), 207.

Mahmood, M., &Orazalin, N. (2017). Green governance and sustainability reporting in Kazakhstan's oil, gas, and mining sector: Evidence from a former USSR emerging economy. *Journal of Cleaner Production*, *164*, 389–397. https://doi.org/10.1016/j.jclepro.2017.06.203

Michelon, G., &Parbonetti, A. (2012). The effect of corporate governance on sustainability disclosure. *Journal of Management and Governance, 16*(3), 477–509. https://doi.org/10.1007/s10997-010-9160-3

Orazalin, N. (2020). Do board sustainability committees contribute to corporate environmental and social performance? The mediating role of corporate social responsibility strategy. *Business Strategy and the Environment*, *29*(1), 140–153. https://doi.org/10.1002/bse.2354

Papoutsi, A., & Sodhi, M. S. (2020). Does disclosure in sustainability reports indicate actual sustainability performance ?*Journal of Cleaner Production*, *260*.

Peters, G. F., Romi, A. M., & Sanchez, J. M. (2019). The infuence of corporate sustainability ofcers on performance. *Journal of Business Ethics, 159*(4), 1065–1087.

Pfeffer, J., &Salancik, G. R. (1978). The external control of organizations: A resource dependence approach. Harper and Row, 23, 358. https://doi. org/10.2307/2392573

Pfeffer, J., &Salancik, G. R. (2003). The external control of organization: A resource dependence perspective. Stanford, California: Standford University Press. https://doi.org/citeulike-article-id:6954

Qian, W., Tilt, C., Dissanayake, D., & Kuruppu, S. (2020). Motivations and impacts of sustainability reporting in the Indo-Pacific region: Normative and instrumental stakeholder approaches. *Business*

ISSN:1624-1940
DOI 10.6084/m9.figshare.26201828
http://magellanes.com/

Strategy and the Environment, *29*(8), 3370–3384. https://doi.org/10.1002/bse.2577

Ramón-Llorens, M. C., García-Meca, E., & Pucheta-Martínez, M. C. (2019). The role of human and social board capital in driving CSR reporting. *Long Range Planning*, *52*(6), 0–1. https://doi.org/10.1016/j.lrp.2018.08.001

Shamil, M. M., Shaikh, J. M., Ho, P. L., & Krishnan, A. (2014). The influence of board characteristics on sustainability reporting Empirical evidence from Sri Lankan firms. *Asian Review of Accounting*, *22*(2), 78–97. https://doi.org/10.1108/ARA-09-2013-0060

Transition, G. (2023). *Deloitte 2023 CxO Sustainability Report Accelerating the Green Transition A letter from Joe Ucuzoglu and Jennifer Steinmann*.

Shaukat, A., Qiu, Y., & Trojanowski, G. (2016). Board attributes, corporate social responsibility strategy, and corporate environmental and social performance. *Journal of Business Ethics, 135*(3), 569–585. https://doi. org/10.1007/s10551-014-2460-9

Velte, P., & Stawinoga, M. (2020). Do chief sustainability officers and CSR committees influence CSR-related outcomes? A structured literature review based on empirical-quantitative research findings.*Journal of Management Control,31*(4). https://doi.org/10.1007/s00187-020-00308-x

Wang, M. (2017). The relationship between firm characteristics and the disclosure of sustainability reporting. *Sustainability, 9*.

Yadava, R. N., & Sinha, B. (2015). Scoring sustainability reports using GRI 2011 guidelines for assessing environemntal, econokic and social dimensions of leading public and private Indian companies. *Journal of Business Ethics*.

Zhao, X., Lynch, J. G. Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis. *Journal of Consumer Research, 37*, 197-206.