

Effect of CEO Duality and Board Characteristics on the Choice of Sustainability Report Format of Listed Firms in India

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Abstract: Stakeholders have raised concerns about how business operations affect the environment. Firms have responded through integrated reporting (financial and non-financial), which seeks to provide additional information about firm activities to improve stakeholders' trust. This study examines the effect of chief executive officer (CEO) duality and board characteristics on the choice of the sustainability report format in India. The study uses an inclusive sample of 800 firm-year observations between 2010 and 2019. The study applies the binary probit to analyze the data from the Indian Stock Exchange. We find that CEO duality increases the likelihood of choosing integrated reporting over stand-alone sustainability reporting. This study suggests that the combined role leads to poor governance and contributes to a choice that presents less information to stakeholders. The second finding shows that independent directors are more likely to choose stand-alone reporting over integrated reporting. The study suggests that the internal policing responsibility of independent directors supports a report format that communicates more information to stakeholders. Finally, the total number of directors is insignificant in terms of the sustainability report format. Our study adds novelty to research because previous studies have only examined CEO and sustainability. However, this study is the first to investigate CEO duality and board characteristics in the choice of a sustainability report format.

Keywords: board characteristics, CEO duality, independent directors, resource dependency theory, sustainability report format.

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INTRODUCTION

Governments, environmental activists, and society have raised concerns about how business operations affect the environment (Lunawat & Lunawat, 2022). This has prompted critical thought about how to appease the public while enabling businesses to produce to meet society's needs. The consensus, therefore, is the submission of detailed sustainability reports outlining firms' environmental and social performances (Meutia et al., 2020; Sustainable Development Goals, 2019). However, two types of report formats (i.e., an integrated report format and a stand-alone report format) affect the sustainability reports communicated to stakeholders. Many studies on sustainability reporting exist, but the choice of the report format has limited studies. A standalone report format communicates more information to the stakeholders than the sustainability report integrated



with financial reporting (Hassan et al., 2020; Hassan & Guo, 2017; Reimsbach et al., 2018). Even though there are studies on sustainability report format, the influence of CEO duality and board characteristics is lacking. A CEO duality occurs the dual role of the CEO job is combined with the board chairperson role (Bui et al., 2020; Corvino et al., 2020). Likewise, independent directors and total board size act as non-executives in a monitoring capacity to ensure shareholders' interests are protected (Yu et al., 2020). The identified gaps in scholarly knowledge in the choice of a report format, which tends to have information asymmetry problems for stakeholders in decision making, motivates this study to examine the effect of CEO duality and board characteristics on the choice of sustainability report format of listed firms using Indian data as a testing ground.

The study uses resource dependency theory to understand the relationship between board characteristics and the choice of sustainability report format. The resource dependency theory relates to the providing of a resource (such as skill, reputation, and experience) to a firm that is essential for the firm's and the board's effective operation (Daily & Dalton, 1994; Gales & Kesner, 1994; Hillman & Dalziel, 2003; Pfeffer & Salancik, 1978). Various research has discussed the resource reliance theory with a focus on the makeup of the board (Boyd, 1990; Daily & Dalton, 1994; Fama, 1980; Fama & Jensen, 1983; Gales & Kesner, 1994). The objectives of this study examine CEO duality and board characteristics with a consequence of reputation, expertise and experience in the choice of report format, which has a direct, consequential effect on sustainability reporting. The board's makeup fills the information gap between the company and its stakeholders, and the provision of pertinent information lends credibility to the company's interactions with its surroundings (Hillman et al., 2009; Korn & Ferry, 1999).

Literature on sustainability and its reporting format communicate appropriate information and is pursued by firms and corporations in the environmental space of operation. Different authors have examined sustainability reporting, environmental disclosure, and social performance disclosure (Qureshi & Hussain, 2021; Sharif et al., 2021; Sumaryati & Rohman, 2019). However, when a company choose the incorrect sustainability reporting format to share information with stakeholders, information asymmetry can occur (Kinderman, 2020). The information problem includes the choice of report format leading to investors' bankruptcy in decision-making with less investment in sustainability. A significant disparity in sustainability investment was found in a study that assessed the sustainability initiatives and performance of listed companies in India (Jha & Rangarajan, 2020). To cure weak information access to stakeholders, other studies have examined the report format that communicates the information (Hassan et al., 2020; Hassan & Guo, 2017; Reimsbach et al., 2018).

CEO duality occurs when the dual role of the CEO job is combined with the board chairperson role (Bui et al., 2020; Corvino et al., 2020). The associations between CEO duality and sustainability disclosure may stem from the agency problem preventing good governance, and the consequence is a negative and insignificant association with disclosure (Cherian et al., 2020; Fallah & Mojarrad, 2019; Husted & Sousa-Filho, 2019; Mudiyansele, 2018; Zhou, 2019). Moreover, a study using the Johannesburg Stock Exchange data argued that CEO duality is insignificant in influencing corporate reporting, i.e. environmental disclosure (Corvino et al., 2020). Similarly, a study in heavily polluting industries in Iran showed an insignificant association between CEO duality and CSR disclosures (Fallah & Mojarrad, 2019). Likewise, a study of a sample of 100 listed firms in Sri Lanka also showed the insignificant influence of CEO duality on sustainability disclosure (Mudiyansele, 2018). Nonetheless, there are, however, positive association studies. For instance, a study showed that CEO duality correlates statistically with carbon performance (Elsayih et al., 2020). The evidence indicates that the CEO function is relevant to strategic decisions on sustainability disclosure. However, a disclosure is incomplete without choosing the report format for reporting the sustainability disclosure. A previous study identified

stand-alone reporting as a determinant of the increase in sustainability reporting (Hassan & Guo, 2017; Orazalin & Mahmood, 2019). However, no current study has examined the influence of CEO duality in choosing a sustainability report format for communicating firms' environmental and social disclosure to stakeholders. With an understanding of resource dependency theory, we expect that a combined role of CEO and chairperson reduces the benefit associated with increasing the expertise needed in governance, especially in a challenging global impact of environmental and social pollution issues.

Independent directors on boards bring expertise and experience to resource the effective function of a board (García-Sánchez & Martínez-Ferrero, 2018; Hillman & Dalziel, 2003). Many studies have examined the relationship between independent directors and sustainability disclosure (i.e. environmental and social performance disclosures), and findings showed mixed outcomes (Fallah & Mojarrad, 2019; Fernandes et al., 2019; Mudiyansele, 2018; Pareek et al., 2019). For example, studies in emerging economies showed an insignificant association between board independence and CSR disclosure of polluting industries in Iran (Fallah & Mojarrad, 2019) and a negative association between independent directors and environmental performance disclosure in India (Pareek et al., 2019). However, other studies showed a positive association. For example, the author of a Sri Lankan study argued that a higher proportion of independent directors is positively associated with sustainability disclosure (Mudiyansele, 2018). Also, another study examined the effects of characteristics of the board of directors on the level of environmental disclosure by Brazilian companies, and the findings showed that the number of independent board members has a positive, statistically significant relationship with the level of environmental disclosure (Fernandes et al., 2019). The presence of independent directors is essential in the choice of a report format because the choice of report format communicates more or less information to stakeholders, but previous studies confirm the selection of stand-alone sustainability reporting as superior compared to integrated reporting (Hassan & Guo, 2017; Orazalin & Mahmood, 2019). The importance of independent directors is reflected in a study on greenwashing behavior with a sample size of 1925 large capital firms. The findings showed that independent directors deter firms from engaging in greenwashing sustainability reports to stakeholders (Yu et al., 2020). The deterrence from whitewashing causes avoidance and reduces the reputational risk for independent directors in approving sustainability disclosure (García-Sánchez & Martínez-Ferrero, 2018). We believe the choice of stand-alone sustainability reporting will increase information to stakeholders (Hassan & Guo, 2017) over integrated reporting (Hassan et al., 2020; James, 2015).

Board size is characteristic of exerting pressure on management using diverse experience and expertise to adequately monitor the firm's activities. Different studies have examined the relationship between total board size and sustainability disclosure. Among them is a Sri Lankan study which argued that a larger board size positively affects sustainability disclosure (Mudiyansele, 2018). Likewise, a study using the context of Latin America showed that board size positively correlates with ESG disclosure (Husted & Sousa-Filho, 2019). Conversely, the authors of a Malaysian study argued that total board size is insignificant to cause an increase in CSR disclosure of listed firms in an emerging economy (Mohd-Said et al., 2018).

We observe from the literature that no study has examined the nexuses between total board size and the choice of report format. Even though the report format is a function of environmental and social performance disclosure, the results favor stand-alone reports over integrated reporting (Hassan & Guo, 2017; Orazalin & Mahmood, 2019). We perceive that a larger board size will positively influence the choice of a report format that can address information asymmetry problems. Therefore, this study believes a similar effect on the choice of sustainability report format. No study has investigated the impact of CEO duality and board characteristics on report format. We use data on 80 listed firms with 800 firm-year observations from the primary database of

the Bombay Stock Exchange (BSE) and employ the binary probit as an estimation technique to test the three hypotheses resulting from the research gaps identified. Hypothesis 1 states a negative association between the CEO with duality role and the likelihood of choosing a stand-alone report format in sustainability reporting. Hypothesis 2 states a positive association exists between the independent board of directors and the likelihood of choosing a stand-alone report format in sustainability reporting. Lastly, hypothesis 3 states a positive association between the total number of board directors and the likelihood of choosing a stand-alone report format in sustainability reporting.

METHODS

The Bombay Stock Exchange is the study's primary database (BSE). The study uses a set of criteria to choose which businesses to include in the study sample. The requirements include i) having no missing data on certain variables for the period between 2010 and 2019 due to the sustainability reporting data availability stated in the 2009 financial year when businesses began voluntary sustainability reporting; ii) large firms, which are defined with criteria of net profit or sales under the rules of the Companies Act 2013, section 135; iii) evidence of sustainability reporting with either a stand-alone format or integrated reporting. To examine the CEO and board characteristics and how it affects the sustainability reporting format, we specify the following econometric model:

$$SRF_{it} = \alpha + \beta_1 CEOChar_{it} + \beta_2 BChar_{it} + \sum \phi CTRL_{it} + \mu_{it} \quad (1)$$

Where i and t denote the cross-sectional units and period, respectively, SRF represents the sustainability report format. $CEOChar$ is a vector of CEO duality. $BChar_{it}$ is a vector of independent directors and board size. The variable $CTRL$ describes the control variables, including firm size, financial leverage, size of the sustainability committee, number of sustainability committee meetings, type of industry and the year effect.

The dependent variable is proxy by SRF_{it} , which connotes the sustainability reporting format. The sustainability reporting format reflects a company's decision regarding whether to provide stakeholders with a stand-alone sustainability report or one integrated with financial reporting. This is a dummy variable that equals one if the company selects an integrated reporting format and 0 if it selects a stand-alone sustainability report format (Hassan et al., 2020; Hassan & Guo, 2017)

The study uses different independent variables. CEO duality measures the dual role of the CEO job combined with the board chairperson role. Thus, where the CEO has both positions, it is coded as one and, if otherwise, zero (Bui et al., 2020; Corvino et al., 2020). We expect that a combined role of CEO and chairperson will reduce the benefit and increase the expertise needed in governance, especially in a challenging global impact on environmental and social pollution.

Independent boards of directors are likely to monitor CEO operation more for sustainable development agenda, which includes submitting social and environmental performance reports to stakeholders. The expertise acquired over the period makes them critical to ensuring non-irresponsibility tendencies exhibited by the firms. Previous studies showed that independent directors prevent greenwashing by firms (Farida & Purwanto, 2021; Yu et al., 2020). However, other studies disagree and question the internal regulatory capacity of independent directors towards environmental disclosure (Pareek et al., 2019).

Board size is the total number of directors serving on the board (Das et al., 2021; Laskar et al., 2022). Executive directors serve on the board and mainly show positive significance (Mohd-Said et al., 2018; Mudiyansele, 2018). Board acts as an internal regulator of operations and a link between the outside world and the firm. The regulatory nature causes the board size to increase information communication to stakeholders and may choose stand-alone reporting over integrated reporting.

Similarly, the control variables include firm size, financial leverage, size of the sustainability committee, number of sustainability committee meetings, type of industry, and year effect. Firm size measures a firm's capacity to undertake CSR and sustainability activities. It is calculated as the natural logarithm of the firm's total assets and is mainly positively associated with environmental performance (Razali et al., 2016). However, some studies showed an insignificant association with environmental disclosure (Adel et al., 2019; Hartikayanti et al., 2016). Financial leverage measures the ratio of total liabilities to total assets (Clarkson et al., 2008; Cormier et al., 2011; Mishra & Suar, 2010). Previous studies showed that financial leverage hurts carbon disclosure (Darus et al., 2019), and hence, it is expected to have a negative association with sustainability report format. Industries in environmental concern spaces receive strict supervision and are willing to get legitimacy for their operations by submitting more information to stakeholders. Studies showed a significant association between hazardous firms and environmental disclosure. The industry type is represented by a dummy variable of 1 for dangerous firms and 0 otherwise (Jackson & Apostolakou, 2010; Shabana et al., 2016). Likewise, studies have shown that the type of industry significantly affects environmental disclosure (Hartikayanti et al., 2016; Rao & Tilt, 2016). The sustainability committee represents the committee that supervises the implementation of CSR and the sustainability agenda of the firm. This committee affects the firm's disclosure, and the impact is mostly positive (Adel et al., 2019; Kend, 2015). The sustainability committee number of meetings represents the number of committee meetings during the year on sustainability strategy and implementation. Previous studies have shown a positive association with CSR reporting (Kend, 2015). The year indicator dummy represents the timing effect and uses a dummy variable in the model to control the year effect (Qui et al., 2016). This aids in dealing with cross-sectional dependence, among other issues.

RESULTS AND DISCUSSION

The descriptive statistics and correlation analysis are stated in Tables 1 and 2. The table provides the means, standard deviations and correlations for all the variables. The study shows that 48.8% of the firms use stand-alone sustainability reporting to firm shareholders, suggesting nearly an even split between stand-alone sustainability reporting and integrated financial, social, and environmental performance reporting. CEOs with a duality of roles account for 30.5% of the study. Independent directors and total board directors have an average mean of 5.831 and 10.966. The deviation from the mean is above 25%, which is high, suggesting an uneven mean distribution. It also indicates an average of 11 directors serving on the board during the study period. The correlation coefficient among the independent variables is less than 0.80, which is consistent with an acceptable level in different studies (Damodar, 2004; Dougherty, 2017), reflecting that the levels of multicollinearity are acceptable. Also, the Variance Inflation Factor (VIF) values are lower than 3.0, indicating that multicollinearity will not cause a problem for the study.

Table 1 Descriptive Statistics

	Symbol	Obs.	Mean	Std. Dev.	Min.	Max
Sustainability report format	SRF	800	0.488	0.500	0	1
CEO duality	CEOD	800	0.305	0.461	0	1
Independent directors	IBZ	800	5.831	1.778	1	14
Total board directors	TBZ	800	10.966	2.846	5	20
Sustainability committee members	SUSM	800	2.441	2.306	0	9
Sustainability committee number	SUSN	800	1.349	1.672	0	9
Financial leverage	FL	800	0.442	0.183	0.039	1.017
Firm size	FS	800	11.752	1.486	7.593	15.864
Type of industry	DIND	800	0.200	0.400	0	1
Year effect	YDU	800	14.500	2.874	10	19

Table 2 Correlation Matrix and Variance Inflation Factor

	1	2	3	4	5	6	7	8	9	10	VIF
SRF	1										
CEOD	-0.069*	1									1.08
IBZ	-0.136**	0.065*	1								2.41
TBZ	0.012	0.089**	0.731***	1							2.82
SUSM	0.418***	0.061*	-0.038	0.115***	1						2.43
SUSN	0.341***	0.115***	-0.024	0.119***	0.688	1					2.17
FL	0.045	0.122***	-0.100**	-0.065*	-0.028	-0.082**	1				1.10
FS	0.286**	0.178***	0.123***	0.403***	0.339***	0.383***	0.132***	1			1.72
DIND	0.085**	0.178***	-0.044	0.154***	0.178***	0.155***	0.126***	0.422**	1		1.29
YDU	0.426	-0.057	-0.123**	-0.056	0.647***	0.573***	-0.131	0.183	-0.000	1	1.99

Note: **p < 0.05, ***p < 0.01 and *p < 0.10 level (two-tailed), Panel (N= 800), Pairwise Correlation

Table 3 presents multivariate results on CEO and board characteristics. *H1* states a negative association between CEO with duality role and the likelihood of choosing a stand-alone report format in sustainability reporting. This hypothesis is supported by Model 2 in Table 3, which shows that a CEO with a duality role has a negative and statistically significant association with the choice of stand-alone report format ($\beta = -0.206^{***}$, $SE = 0.104$). This suggests that the combined role leads to poor governance and contributes to a choice that presents less information to stakeholders (i.e. selection of integrated reporting). The study is consistent with previous studies (Cherian et al., 2020; Fallah & Mojarad, 2019; Husted & Sousa-Filho, 2019; Mudiyansele, 2018; Zhou, 2019) that argued that poor governance because of duality denies firms the opportunity to have diverse experience and skills on the board. It, therefore, suggests that poor governance causes the CEO to choose integrated reporting instead of stand-alone reporting. It also indicates that a combined role of CEO and chairperson reduces the benefits regarding increased expertise needed in governance, especially in a challenging global impact from environmental and social pollution issues.

Table 3 Probit-Board Characteristics and Sustainability Reporting Format (SRF)

	Model 1 SRF	Model 2 SRF	Model 3 SRF
SUSM	0.042 [0.032]	0.037 [0.032]	0.038 [0.032]
SUSN	0.018 [0.042]	0.011 [0.042]	0.010 [0.042]
FL	0.549** [0.257]	0.570** [0.264]	0.504* [0.265]
FS	0.349*** [0.038]	0.324*** [0.038]	0.330*** [0.040]
DIND	-0.336*** [0.126]	-0.312*** [0.127]	-0.355*** [0.127]
YDU	-0.073*** [0.023]	-0.059*** [0.023]	-0.064*** [0.024]
Independent variables			
Board executive directors			
CEO duality	-0.206*** [0.104]		
Independent directors		0.076*** [0.028]	
Total board directors			0.017 [0.019]
Wald chi-square	112.60***	113.06***	109.29***
Pseudo R-square	0.105	0.109	0.103
Observations	800	800	800

Robust standard errors are in parenthesis. *, **, *** Indicates significance at 10%, 5% and 1% levels respectively.

H2 states a positive association between the independent board of directors and the probability of choosing a stand-alone report format in sustainability reporting. Model 3 from Table 4 shows that the independent board of directors has a positive and statistically significant association with the stand-alone report format ($\beta = 0.076^{***}$, $SE = 0.028$). Therefore, H2 is supported, suggesting that independent directors choose a stand-alone report format to ensure complete information to shareholders and stakeholders for strategic decision-making and, in the process, guarantee a reduction in its reputational risk in approving sustainability disclosures. It can be concluded that the presence of independent directors deters firms from engaging in greenwashing of sustainability reports to stakeholders (Yu et al., 2020) as well as avoiding reputational risk (García-Sánchez & Martínez-Ferrero, 2018) from certifying sustainability reports.

H3 states a positive association between the total board size and the likelihood of choosing a stand-alone report format in sustainability reporting. Model 3 from Table 3 shows that the total number of directors has an insignificant association with the stand-alone report format ($\beta = 0.017$, $SE = 0.019$). Therefore, H3 is not supported, suggesting the board size is ineffective unless the independent members are experts with a high reputation. The findings also indicate that a large board size sometimes breeds diverse ideas that may negatively affect sustainability decisions (Mohd-Said et al., 2018).

Regarding the control variables in Table 3, we find that firm size, financial leverage and type of industry are sensitive to the choice of stand-alone report format in sustainability reporting. Firm size and financial leverage have significant positive effects, but the type of industry has a negative statistical significance with the choice of a stand-alone report format. The study suggests that big firms are more likely to choose stand-alone reporting over integrated reporting, which is consistent with previous studies (Hassan & Guo, 2017).

The first contribution confirms previous studies that CEO duality causes poor governance (Cherian et al., 2020; Fallah & Mojarad, 2019). Nonetheless, this study is the first to examine the effect of CEO duality on choosing a sustainability report. The second contribution confirms that the presence of independent directors deters firms from engaging in greenwashing of sustainability reports to stakeholders (Yu et al., 2020) because independent directors seek to avoid reputational risk (García-Sánchez & Martínez-Ferrero, 2018). Our study adds novelty to research because previous studies have only examined independent directors and sustainability (Fernandes et al., 2019; Mudiyansele, 2018), but this study is the first to investigate independent directors and the choice of sustainability report format.

The practical implications show that corporate governance is undermined when there is a CEO duality, and policy must continue to tighten deterrence in a combined role by CEOs. The tightening benefits an increase in the expertise needed in governance, especially in a challenging global impact from environmental and social pollution issues. The policy of introducing independent directors brings diverse knowledge and experience to improve the management of firms. Regulators and governments must continue to adopt the policy, possibly increasing independent directors proportionately higher than executive directors.

CONCLUSION

This study contributes to the knowledge of sustainability reporting by examining the effects of CEO and board characteristics on the choice of sustainability report format, using a sample of 800 firm-year observations between 2010 and 2019. The study applied the binary to analyze the Indian Stock Exchange data. The study shows CEO duality increases the likelihood of choosing integrated reporting over stand-alone sustainability reporting. Furthermore, independent directors are more likely to choose stand-alone reporting over integrated reporting. Lastly, we find that the entire board of directors are insignificant concerning their effects on the choice of sustainability report format. Regarding the control variables, we find that firm size, financial leverage and type of industry are sensitive to the choice of stand-alone report format in sustainability reporting. Firm size and financial leverage have significant positive effects. This suggests that big firms are more likely to choose stand-alone reporting over integrated reporting. However, the type of industry has a negative, statistically significant effect on the choice of stand-alone report format. The study has its limitations, the study chooses the India Stock market as the testing ground. India's matured emerging economy practices sustainability reporting, which aligns with the sustainable development agenda (Idowu et al., 2013). However, using a single country with listed firms may limit the generalizability of the findings to other countries. Future studies can look at comparative studies between emerging and advanced economies on the impact of gender on board and the choice of report format.

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