

The Impact of Earning Management on Green Banking Disclosure: The moderating role of Corporate Governance

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Abstract

The aim of the study is to empirically investigate the impact of earning management (EM) on green banking disclosure (GBD). Furthermore, the current study also aims to assess the moderating role of corporate governance (CG) structures on the relationship between EM and GBD. (EM) in this study is measured through an index comprising upon earning restatements, insider dealing controversies, profit warnings and accounting controversies. An index consisting upon environmental innovation, resource use and emission index is used to measure the green banking disclosure. (CG) is indexed through different board characteristics. Due to possible occurrence of endogeneity problem, generalized method of movements' (GMM) model is applied as a robust technique for mitigating such like endogeneity between the variables and error term. A panel data of 37 banks from Brazil, Russia, India, China and South Africa (BRICS) countries for a period from 2009 to 2018 was taken from the DataStream database. The finding of the study shows positive impact on GBD suggesting the management entrenchment motive of the managers. Through the lens of legitimacy theory, it can be concluded that banks involved in EM are more likely to publish environmental information to dissuade stakeholders' attention. The study results indicate that CG moderates the association between EM and GBD. It can be presumed that CG monitors the opportunistic behaviour of managers towards EM by disproportionately disclosing the green banking initiatives to legitimize their operations and avoid disciplinary actions from stakeholders. The study has important implications for policy makers, investors and management. Managers may get insights by providing precise earning information to the market and various stakeholders' (due to increased awareness) in order to avoid disciplinary actions which may also cause lose their jobs. Theoretically, the study contribute to literature as no evidence is available with regard to the relationship of EM and GBD in BRICS countries.

Keywords: Green banking disclosures, earning management, corporate governance, environmental innovation, resource use, emissions

Introduction

The relevance of the banking sector's contributions to environmental restoration is acknowledged by governments, the media, and non-profit groups. (Day & Woodward, 2009). Banks, because of their broad reach and capacity to bring individuals from all backgrounds together, are well positioned to broker agreements among stakeholders to prevent environmental degradation and rehabilitate undeveloped regions (Day & Woodward, 2009). Green finance largely depends on sustainable investment and banking to create and maintain sustainable practices. (Volz, 2018). Deposit and loan activities are critical to the global economy, yet they also harm the environment. Recognizing the potential for commercial banks to play an important role in advancing green banking efforts, one method is to invest in lower emission ratio technology and priority industries that provide loans with reduced greenhouse gas emissions. (Bettina Furrer, Jens Hamprecht and Volker H. Hoffmann, 2012; Olaf Weber, Marcus Fenchel & Roland W. Scholz, 2008). The use of environmentally friendly techniques by financial institutions to lessen their influence on the environment both within and outside of their operating limits is known as "green banking." Power consumption from lighting, ventilation, and other equipment, both directly and indirectly via client services, is a factor in how banking operations affect the environment. The environment is more affected by direct influences than by indirect ones (Sahoo & Nayak, 2015). "Environmental disclosures" are non-financial disclosures that focus on a company's impact on the natural and physical environment in which it operates. (Wilmshurst & Frost, 2000). These statements demonstrate a company's commitment to satisfying its environmental responsibility in its operations. Environmental consequences, pollution rates, emissions, resource consumption, remedial efforts, and recycling programs are all urged to be disclosed by businesses (Campbell, 2004).

Environmental concerns are prioritized and incorporated into business strategy by efficient companies. Sustainable methods boost brand image, save operating costs, and increase stakeholder confidence. Corporations often organize committees or task groups to manage environmental initiatives, guarantee compliance with environmental regulations, and publicize environmental accomplishments (Campbell, 2004). Morality and responsibility are fostered by good business governance. Environmental dangers, sustainability, and performance are best assessed by boards with broad expertise and independent directors. The individuals in question are in charge of supervising and leading the administrative team to ensure that the organization's environmental policies and practices satisfy its long-term objectives and societal expectations. CG measures, however, do not ensure environmental transparency or sustainability. Environmental behavior and reporting are influenced by regulations, societal pressures, and market dynamics. As a result, comprehensive governance structures that promote environmental responsibility and transparency must incorporate regulatory agencies, industry groups, investors, and other stakeholders (Day & Woodward, 2009).

Because government policies may have a big impact on business, many corporations are increasingly including political strategy into their long-term planning. Profit margin is one of the most crucial indicators of success. Shareholders, suppliers, employees, consumers, neighbors, and authorities are all interested in the subject. Companies that do not overstate their results in financial reports will undoubtedly win favor with investors in the future. The change in focus in the context of financial duties is supposed to create confidence among investors and other stakeholders (Diego Prior, Jordi Surroca & Josep A. Tribo, 2006). Managers may mislead stakeholders about the company's genuine economic performance or avoid breaching contractual obligations in the context of financial reporting by leveraging the discretion provided by GAAP. Managers may participate in earnings management by exerting their discretion in financial reporting and transaction structuring to deceive some stakeholders about the organization's underlying economic performance or to affect contractual outcomes that rely on reported accounting data (Healy & Wahlen, 1999). Engaging in actions such as earnings manipulation may result in the firm losing its stakeholders' support and becoming more cautious. Customer discontent,

investor pressure, regulatory legal action, a lack of legitimacy in the community, and media exposure may all contribute to the degradation of a company's image and, eventually, the loss of its corporate status. As a way of compensating stakeholders, business executives may have a significant motivation to participate in corporate environmental disclosure practices (Shaker A. Zahra, Richard L. Priem & Abdul A. Rasheed, 2005). This is because shareholder punishments might result in the manager's firing and considerable reputational damage to the organization. Participation in socially and ecologically responsible endeavors has a clear link with increased stakeholder satisfaction and the development of an organization's image. The act of disclosing information on social and environmental responsibility has the ability to help stakeholders develop a favorable reputation. Possessing strong corporate values enables a firm to form connections with its many stakeholders, resulting in enhanced customer loyalty, effective alliances, better regulatory contracts, favorable media coverage, and the avoidance of government fines (Patten & Trompeter, 2003). As evident from the previous research findings, a negative link has been established between the EM and GBD (Ali Meftah Gerged, Khaldoun Albitar & Lara Al-Haddad, 2020; Pyo & Lee, 2013; Yongtae Kim, Myung Seok Park & Benson Wier, 2011; Hsiang Lin Chih, Chung-Hua Shen & Feng-Ching Kang, 2008; Patten & Trompeter, 2003; Rafael la Porta, 2000;) suggesting that firms publishing GBD are less likely to be involved in unethical practice like EM. On the other hand, a positive relationship between the two variables (Lauren A. Jordaan, Marna de Klerk & Charl J. de Villiers, 2018; Nor Atikah Binti Shafai, Azlan Bin Amran & Yuvaraj Ganesan, 2018; Chih *et al.*, 2008) suggesting that firms involved in EM are more likely to be involved in publishing GBD to get legitimize their operations.

Environmental disclosure has covered conflicts of interest and opportunistic managerial discretion in developed countries like the US and UK (Shafai *et al.*, 2018). EM may divert stakeholders' attention away from CSR. Companies may utilize environmental data to shape stakeholders' perceptions of their ethics and reputation (Prior *et al.*, 2008). Maintaining the balance between a company's bottom line and its impact on society requires strong corporate governance measures to be put in place. By using these devices, shareholders' interests may align with broader societal issues (Giannarakis, 2014). Given the importance of boards in safeguarding stakeholder interests, their structure and composition represent a cornerstone of corporate governance. Effective corporate governance may increase a company's transparency in revealing financial and non-financial information. Environmental policies, strategies, and disclosure practices may all be created with its help (Jizi, 2017). It is only possible to generalize the connection between corporate governance and environmental disclosure by considering the specifics of each country's legislative system (Giannarakis, 2014).

Problem Statement

The growing environmental concerns have pushed the researchers to study various factors underlying environmental motivations, but still there are some shortcomings in the available literature. The relationship between EM and GBD has been explored across the globe mainly in the context of developed countries with single legal frameworks (Jordaan *et al.*, 2018; Kim *et al.*, 2011; Pyo & Lee, 2013; Shafai *et al.*, 2018; Nan Sun, Aly Salama, Khaled Hussainey & Murya Habbash, 2010). Moreover, very limited research is available in the context of developing economies that too with single legal system (Ali Meftah Gerged, Eshani S. Beddewela & Christopher J. Cowton, 2021). However, there is no evidence in literature regarding the relationship of EM and GBD in the context of emerging economies especially in BRICS countries. The current study is attempt to fill this gap by examining the said relationship in the above mentioned context and with multiple regulatory frameworks.

Objectives of the study

As mentioned above, majority of studies conducted so far have focused on the linkage between EM and environmental disclosure based developed economies having single regulatory framework. The current study therefore aims to empirically evaluate the effect of EM on GBD in the emerging economies especially the BRICS countries.

Secondly, based on the above discussion, the purpose of this study is to assess the effect of CG structures

on the relationship between EM and GBD across different countries.

Research Questions

What is the effect of EM on GBD in various geographical settings in the context of emerging economies especially the BRICS countries?

How CG structures effect the relationship between EM and GBD across distinct cultural embedded countries?

Conceptual Framework

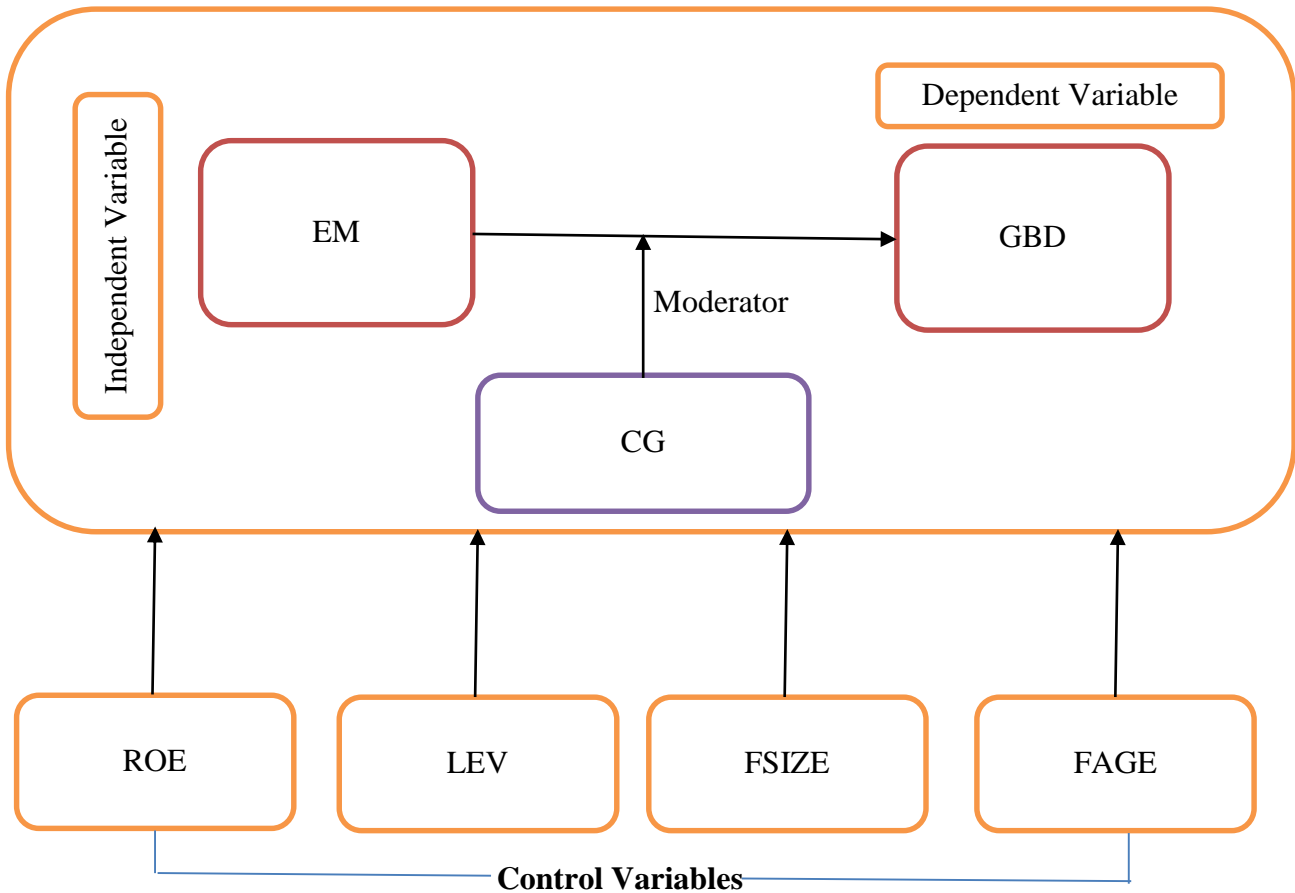


Figure 1: Conceptual Framework

Theoretical background and hypotheses development

Theoretical background

Relationship between EM and GBD is explained through the lens of various theoretical perspectives. As evident from the available literature, researchers have applied agency, legitimacy, stakeholders' and institutional theories to help understand the relationship among EM, GBD and CG structures. Agency theory addresses potential conflicts in principal-agent relationships caused by information asymmetry (Jensen & Meckling, 1976). Extensive research has been conducted on this relationship, focusing on managers' actions and the effect of profitability management on a company's market value and stakeholders (Gerged et al., 2020; Sun et al., 2010). Corporate social and environmental information disclosure is influenced by societal factors, which can have positive or negative outcomes, such as community approval or disapproval (legitimacy theory). Adhering to societal norms and expectations is

essential for establishing a positive reputation and averting potential sanctions (Dowling & Pfeffer, 1975). Corporations can establish legitimacy through conformance, persuasive communication strategies, and the exploitation of symbolic or cultural values (Dowling & Pfeffer, 1975).

Hypothesis developments

Impact of EM on GBD

EM arises due to information asymmetry among the managers and various stakeholders'. Managers are at position to utilize the unshared information for their personal gain (Prior et al., 2006). Managers use accounting discretion as authorized by the GAAP, to present the financial statements in a way that best suit their mal-intentions (Erica Yip, Chris van Staden & Steven Cahan, 2011). EM is basically the reporting of financial position of a company not representing the true financial situation of a company (Zahra et al., 2005). EM once probed may result in loss of reputation of the company in the markets in terms of decline in share prices (Yip et al., 2011). The practice of EM by the managers is enrooted in the regulatory frameworks of the countries (Gerged et al., 2021b). Managers maximize their efforts to engage in GBD as to escape regulators involvement (Julie H. Collins, Douglas A. Shackelford & James M. Wahlen, 1995 ; Jones, 1991). GBD is considered to be a master tool for diverting the stakeholders' attentions from the opportunistic behaviour and boosting the corporate image. As its existence is indicative of better CG structures and reliable financial statements (Deegan, 2002; Dowling & Pfeffer, 1975).

In a study of 109 firms in Canada, a positive relationship is reported between EM and GBD (Gargouri et al., 2010). Similarly, in a study of 1653 firms over 46 countries, environmental disclosure is reported to have a positive relationship with earning smoothing, loss avoidance and aggressive earnings (Chih *et al.*, 2008). While analyzing the data of 593 firms from 26 countries, Prior *et al.*, (2008) argued a positive relationship between the two variables. They posit that managers' involvement in GBD is to divert the attentions of stakeholders' from their unethical practices like EM. They further supported the assumption of management entrenchment strategy. Similarly, in a study of 206 Malaysian companies for the year 2016, Shafai *et al.*, (2018) found that CSR is used by managers to mask up their unethical behaviour like EM.

In view of the above, 1st research hypothesis of the study is as under;

H1: EM has a positive and significant impact on GBD.

Moderating role of CG on the relationship between EM and GBD

CG structures are proven to be instrumental while controlling the managers' resourceful activities thereby enhancing the reliability and quality of earnings (Klein, 2002). Imperfect auditing in the real-world economy may incentivize managers to engage in opportunistic profit management. Due to information asymmetry, managers may engage in earnings management or disclose information regarding the firm's future performance to insiders such as directors and management through financial reporting (Leuz et al., 2003). Implementing efficient corporate governance (CG) mechanisms can enhance the dependability and excellence of accounting earnings by supervising and discouraging opportunistic managerial conduct. Literature on the impact of CG structures in the nexus between EM and GBD is very scarce (Gerged et al., 2020; Mingzhi Liu, Yulin Shi, Craig Wilson & Zhenyu Wu, 2017; Sun et al., 2010). Analyzing data extracted from UK firms on the moderation effect of CG in EM-GBD nexus Sun et al., (2010) few board structures that could impact this relationship. The study by Liu et al., (2017) found no statistically significant correlation between EM and CED in examining the influence of family ownership on the relationship between EM and CED. Gerged et al. (2020) have shown that management ownership, institutional ownership, and board size moderate the correlation between EM and CED in emerging economies. The influence of CG arrangements on the correlation

between EM and CED has been sparsely investigated, particularly in advanced economies. However, Gerged et al., (2020) research is an anomaly. The current body of literature needs to provide insights into the impact of CG on the association between EM and GBD across various emerging economies. Hence, the inquiry into the potential moderating effect of corporate governance structures on the relationship between environmental management and global business development still needs to be solved within the framework of developing nations.

In view of the above, our second hypothesis is;

H2: CG moderates the relationship between EM and GBD.

Methodology

Population and Sampling

The nature of this study is exploratory as it is primarily interested to explore a cause and effect relationship between EM and GBD. The present research work examines the factors that influence the disclosure of green banking practices in emerging economies, specifically the BRICS nations. The study adopted quantitative research designs to answer the question of how EM effect GBD and further CG structures influence that association. The present study applied data on banks that were listed on the respective stock exchanges of the member countries of the BRICS during the time frame spanning from 2010 to 2019. Data has been extracted from the Eikon-DataStream database. At the outset, our sample consisted exclusively of banks officially registered on member nations' stock exchanges, for which we had access to complete data throughout the entire duration of our analysis on Data Stream. A total of 62 banking entities were identified as being accessible. Nonetheless, due to the absence of data from 24 banking firms, the present investigation was carried out employing a final sample of 37 prominent banks in the BRICS member nations. The analysis comprised a total of 370 yearly observations. The research adopted the content analysis technique to measure the dependent variable. Additive index is used in this study to equally weight the selected dimensions of CG structures.

Variable and its measurement

Content analysis technique has extensively been used in prior research (Sudipta Bose, Habib Zaman Khan, Afzalur Rashid & Shajul Islam, 2018; X. H. Meng, S. X. Zeng, X. M. Xie & G. Y. Qi, 2015; Arifur Khan, Mohammad Badrul Muttakin & Javed Siddiqui, 2013). The current study applied the scoring technique to measure the dependent variable i.e. GBD. A score of 1 is allotted to the bank if it reports an item of GBD and 0 in case of non-reporting. The scores obtained by each bank is summed up as ratio between total disclosure and total displayed disclosure (Gerged et al., 2021a ; Bose et al., 2018; Shafai et al., 2018; Haji, 2013).

$$GBD = \frac{\sum_{i=1}^n di}{\eta} \dots\dots\dots (3.1)$$

Where,

GBD= Green banking disclosure.

η = total number of green items.

di = total number of disclosed items.

A high value provides more GBD while a low score indicating non-compliant banks. Data regarding EEI, RUI and EMI is taken from the environmental pillar score available at DataStream (Isabel-Maria Garcia-Sanchez, Nicola Raimo & Filippo Vitolla, 2021; Kuzey, 2019; Grahn, 2018). The present investigation endeavours to adopt a novel methodology by constructing an index following the work of (Carlos Serrano-Cinca, Begoña Gutierrez-Nieto & Martha Bernate-Valbuena, 2019; Aerts & Zhang, 2014), that integrates discrete measures of EM. The indicators comprise earnings restatements, profit

warnings, insider dealings, and accounting controversies. This study examines various corporate governance (CG) factors: board size, board independence, board meetings, board attendance, board gender diversity, and board structure. The current study has created an additive index by grouping the scores into five distinct categories, drawing on earlier research by (Idrees Ali Shah, Syed Zulfiqar Ali Shah, Muhammad Nouman, Farman Ullah Khan, Daniel Badulescu & Laura-Mariana Cismas, 2021; Uddin & Ahmmed, 2018; Agrawal & Nasser, 2012). The Governance Index is a metric that spans a scale of 1 to 5, wherein elevated scores indicate superior governance, while lower scores suggest bad governance. Reverse coding is utilized to accommodate the negative attributes of the index, thereby yielding a more resilient outcome. An elevated governance score indicates enhanced corporate governance practices.

The research employs a corporate governance index score metric to evaluate the potential association between sound business practices and increased levels of environmental disclosure. Following the research work of (Agrawal & Nasser, 2012; Nuskiya et al., 2021; Shah et al., 2021), this study investigates the impact of corporate governance on environmental disclosure, focusing on the corporate governance score. Additionally, the governance index of the company is segmented into three equal parts, forming a binary variable for corporate governance. Banks that fall within the top third percentile in a given year have attributed a score of 1, signifying commendable governance. In contrast, financial institutions within the middle and lower terciles are assigned a numerical score of zero. Furthermore, ROE is measured total income scaled by total equity (Lies Bouten, Patricia Everaert & Robin W. Roberts, 2012; Galani et al., 2012; Hackston & Milne, 1996; W & Triasih, 2020). Firm leverage is obtained by total debts over total assets (Adams, 2002; Emre Akbas, 2014; Haniffa & Cooke, 2005; Sun et al., 2010). Firm size is measured by taking natural log of total assets (Cormier & Magnan, 2003; Faizah Darus, Salina Mad & Haslinda Yusoff, 2014; Emre Akbas, 2014; Gerged et al., 2021a). firm age is calculated by taking natural log of total years since inception of the firm (Xiaojian Xiang, Chuanjiang Liu, Mian Yang & Xiaomeng Zhao, 2020; Mahdi Salehi, Hossein Tarighi & Malihe Rezanezhad, 2019; Emerald Edem Welbeck, Godfred Matthew Yaw Owusu, Rita Amoah Bekoe & John Amoah Kusi, 2017; Muttakin & Khan, 2014;).

Model Specification

Previous research employed various models, including the Jones model (1991), the modified Jones model (Patricia M. Dechow, Richard G . Sloan, Amy P. Sweeney, 1995), and the Kothari model (S.P. Kothari, Andrew J. Leone & Charles E. Wasley, 2005) used by (Gerged et al., 2021b; Sun et al., 2010). A dynamic panel model is employed to scrutinize the association between dependent variables and those that are independent. Previous values of EM and CG influence the decision regarding GBD. As per the extant literature (Gerged et al., 2021c), past values of EM may have an impact the present GBD patterns, whereas GBD may also influence EM. The variables exhibit a causal relationship with one another. Likewise, there can be a reverse causality between the independent variables CG and ROE and the dependent variable GBD. When endogeneity between the dependent and explanatory variables is caused by reverse causality, static models are ineffective. Drawing on prior research conducted by (Gerged & Albitar, 2021; Ullah & Akhtar, 2018), we utilize a two-step GMM model to mitigate the potential issue of endogeneity, which is not adequately addressed by conventional models and can lead to suboptimal estimates. Arellano and Bond (1991) recommended utilizing the generalized method of moments (GMM) due to its ability to address endogeneity issues and omitted variable biases. According to Hansen's (1982) research, the GMM model is reliable for estimating heteroscedasticity and serial correlation.

$$GBD_{i,t-1} = \beta_0 + \beta_1 EM_{i,t-1} + \beta_2 CG_{i,t-1} + (EM_{i,t-1} * CG_{i,t-1}) + \beta_4 ROE_{i,t-1} + \beta_5 Lev_{i,t-1} + \beta_6 Fsize_{i,t-1} + \beta_7 Fage_{i,t-1} + \varepsilon_{i,t} \dots\dots\dots (3.2)$$

$$EEI_{i,t-1} = \beta_0 + \beta_1 EM_{i,t-1} + \beta_2 CG_{i,t-1} + (EM_{i,t-1} * CG_{i,t-1}) + \beta_4 ROE_{i,t-1} + \beta_5 Lev_{i,t-1} + \beta_6 Fsize_{i,t-1} + \beta_7 Fage_{i,t-1} + \varepsilon_{i,t} \dots \dots \dots (3.3)$$

$$RUI_{i,t-1} = \beta_0 + \beta_1 EM_{i,t-1} + \beta_2 CG_{i,t-1} + (EM_{i,t-1} * CG_{i,t-1}) + \beta_4 ROE_{i,t-1} + \beta_5 Lev_{i,t-1} + \beta_6 Fsize_{i,t-1} + \beta_7 Fage_{i,t-1} + \varepsilon_{i,t} \dots \dots \dots (3.4)$$

$$EMI_{i,t-1} = \beta_0 + \beta_1 EM_{i,t-1} + \beta_2 CG_{i,t-1} + (EM_{i,t-1} * CG_{i,t-1}) + \beta_4 ROE_{i,t-1} + \beta_5 Lev_{i,t-1} + \beta_6 Fsize_{i,t-1} + \beta_7 Fage_{i,t-1} + \varepsilon_{i,t} \dots \dots \dots (3.5)$$

Where,

GBD in the above equation is represented by $GBD_{i,t-1}$ as main dependent variable of the model.

$EEI_{i,t-1}$, $RUI_{i,t-1}$ and $EMI_{i,t-1}$ are the sub-dependent variables of GBD which show the disclosure of i^{th} bank at t^{th} time period. CG structures represented by $CG_{i,t-1}$ ($EM_{i,t-1} * CG_{i,t-1}$) shows the moderation effect of CG EM-GBD, EM-EEI, EM-RUI and EM-EMI nexus of the i^{th} bank at t^{th} time period. β_0 denotes the coefficient, whereas, $ROE_{i,t-1}$, $Lev_{i,t-1}$, $Fsize_{i,t-1}$, and $Fage_{i,t-1}$ demonstrate the return on equity, leverage, firm size and firm age of the i^{th} bank at t^{th} time period. $\varepsilon_{i,t}$ shows the error term of ith bank at t^{th} time period.

Data Analysis and Discussion

Descriptive Statistics

Table 4.1 presents the descriptive statistics of the variables used in the study. The initial row of the data table displays the average GBD value of 0.356, exhibiting a range of 0 to 0.926 and a standard deviation of 0.253. The findings of this study reveal that the level of green banking disclosure reported by the selected banks is 35.6%, surpassing the figures reported by Gerged et al. (2020), which amounted to 0.094. The environmental disclosure was recorded at 0.140 (Gerged et al., 2020).

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Median	Std.	Min	Max
			Dev.			
GBD	370	0.356	0.352	0.253	0.002	0.926
EEI	370	.368	.335	.268	.001	.975
RUI	370	.410	.394	.299	.000	.998
EMI	370	.377	.349	.299	.000	.993
EM	370	0.465	0.000	0.499	0.000	1.000
CG	370	0.479	0.466	0.250	0.000	1.000
ROE	370	0.148	0.132	0.141	0.009	0.930
LEV	370	0.160	0.083	0.200	0.000	0.896
FSIZE	370	10.981	11.084	1.471	1.934	12.619
FAGE	370	1.852	1.550	1.367	0.845	9.862

Throughout the study period, the surveyed banks increased their green banking disclosures, with reported values ranging from 0.2% to 92.6%, representing the lowest and highest values, respectively. On average, the value of environmental innovation is 0.368, with a range of values spanning from 0.001 to 0.975. The sample data reveals that the mean value of the Resource Utilization Index (RUI) is .410, with a range of values from 0% to 99.8%. The result suggests banks' efficient utilization of resources in the selected sample. The average EMI value is 37.7%, indicating a favourable trend ranging from a minimum of 0 to a maximum of 99.3, as reported on banks' emissions control. Nearly, 50% of the surveyed financial institutions engage in EM, with an average value of 0.465. The study reveals that the mean CG value is 48%, constituting 36% of the GBD reporting by banks in the selected economies.

Correlation Analysis

Table 4.2 displays a correlation matrix depicting the interrelationships among seven variables: GBD, EM, CG, CG*EM, ROE, LEV, FSIZE, and FAGE. The diagonal elements exhibit a value of 1.0, signifying a complete association between a variable and itself. The remaining values denote correlation coefficients that span from -1.0 to 1.0, indicating the magnitude and orientation of the correlation between two given variables. Asterisks denote the statistical significance of each correlation coefficient.

Table 4.2: Pairwise correlations

Variables	GBD	EM	ICG	ICG*EM	ROE	LEV	FSIZE	FAGE
GBD	1.000							
EM	-0.077	1.000						
ICG	0.116**	-0.202***	1.000					
CG*EM	-0.154***	0.111**	-0.058	1.000				
ROE	0.141***	0.029	0.085*	0.076	1.000			
LEV	0.100*	-0.066	-0.049	-0.026	-0.051	1.000		
FSIZE	-0.092*	0.021	-0.071	0.047	0.040	-0.114**	1.000	
FAGE	-0.133**	0.045	-0.008	0.007	0.012	-0.097*	0.058	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Scholars generally recommend that the correlation coefficient between variables should not exceed 0.8. The correlation coefficients of all variables in the present study are below 0.8, indicating the absence of multicollinearity issues among the variables. This is due to the weak correlation observed between them. The variance inflation factor (VIF) was assessed for each of our models, and the maximum mean value observed was 1.046. This suggests that the issue of multicollinearity may not require consideration when endeavoring to elucidate the outcomes of a GMM analysis.

Analysis

GBD as the main dependent variable, sub-dependent variables of study are EEI, RUI, and EMI. EM is the independent variable while (CG*EM) is the interaction term of CG and EM. Additionally, the model also includes control variables such as Return on Equity (ROE), Financial Leverage (LEV), Firm Size (FSIZE), and Firm Age (FAGE). The outcome of the models are presented in Table 4.3. Model 1, shows that CG moderates the relationship between EM and GBD. The coefficient and standard error values are -0.478 and 0.135, respectively. Furthermore, the coefficient and standard error estimates of 0.209 and 0.038, respectively, about CG, indicate a robust positive and statistically significant association with the GBD. The findings of Models 2, 3, and 4 indicate that CG serves as a moderator in the associations between EEI & EM, RUI & EM, and EMI & EM, thereby providing support for the primary model. The study findings indicate that Models 1, 2, and 3 demonstrate a significant and favourable correlation between ROE, EEI, RUI, and EMI. However, Model 1 provides an insignificant association between ROE and GBD. The study reveals a significant and affirmative correlation between leverage, the disclosure of green banking practices, and the utilization of resources by banking institutions. A significant correlation exists between FSIZE and the primary dependent variable, as well as all three sub-divisions of the environmental pillar. According to the findings presented in Models 1 and 4 of Table 4.3, FAGE has a substantial adverse effect on both green banking disclosure and GHG emissions. The corresponding coefficient and standard error values are -0.084 (0.019) and -0.049 (0.014).

Table 4.3: Results of GMM analysis

VARIABLES	Model 1 GBD	Model 2 EEI	Model 3 RUI	Model 4 EMI
L. Dependent Var.	0.322*** (0.036)	-0.068 (0.044)	-0.027 (0.035)	0.206*** (0.035)
EM	0.129*** (0.035)	0.079* (0.047)	0.233*** (0.066)	-0.002 (0.062)
CG	0.209*** (0.038)	-0.396** (0.157)	0.308*** (0.083)	0.182*** (0.061)
CG*EM	-0.478*** (0.135)	-1.067*** (0.115)	-0.834*** (0.146)	-0.742*** (0.221)
ROE	0.133 (0.086)	0.243** (0.098)	0.732*** (0.109)	0.816*** (0.084)
Lev	0.075* (0.042)	-0.032 (0.045)	0.461*** (0.088)	0.034 (0.064)
Fsize	0.043*** (0.007)	-0.084*** (0.011)	0.046*** (0.017)	0.016* (0.008)
Fage	-0.084*** (0.019)	0.045 (0.030)	0.039* (0.023)	-0.049*** (0.014)
Constant	-0.230** (0.095)	1.468*** (0.163)	-0.532** (0.222)	0.078 (0.073)
Observations	333	333	333	333
Number of banks	37	37	37	37
AR1	0.000	0.000	0.000	0.000
AR2	0.151	0.413	0.034	0.797
Hansen	0.744	0.904	0.923	0.888

*First term in the column shows the coefficient and second term in column within parenthesis denotes the standard error. The table provides the relationship between EM and GBD and the impact of CG on this relationship. Model 1 presents the above relationship for the main dependent variable i.e. GBD, whereas, model 2 shows the relationship of EM with the EEI and the impact of CG on the relationship. Model 3 denotes the relationship and moderating effect of EM and CG with RUI. Lastly, model 4 demonstrates the same relationship with the GHG emissions. *, **, *** shows significance at 10%, 5% and 1%.*

The Wald test indicates that the model as a whole is statistically significant. The results of the Arellano-Bond test indicate that the second-order correlation is not statistically significant, suggesting that autocorrelation has been effectively addressed at the lag 2 stage. Furthermore, the insignificance of the Hansen test indicates acceptance of the null hypothesis that no correlation exists between the instruments and the error term.

Discussion

The positive correlation between EM and the GBD supports our main hypothesis that managers use corporate environmental disclosure as an established administrative strategy to divert stakeholder attention away from their unethical activities. In order to prevent disciplinary proceedings from stakeholders, it has been determined that CG structures are proven to be instrumental in controlling

managers' exploitative behaviour with EM and resultantly provide too much information about the GBD. Simply put, the assumptions of agency and stakeholder theory that managers must prioritize the interests of all stakeholders, including shareholders. Managers are caught between conflicting expectations from shareholders and other stakeholder groups. The managers become self-interested rather than principal-interested as a result of this phenomenon. Managers are more forthcoming with GBD details to project a favourable image and clear up conflicts with their businesses' numerous stakeholder groups.

Moreover, the relationship of CG structures with EM and GBD exhibits a negative link, suggesting that CG structures may restrict EM and increase the GBD towards the discharge of corporate environmental responsibility to the society. CG structures are proven to be helpful in addressing the rights of stakeholders' (Gerged et al., 2020; Sun et al., 2010). The positive relationship of EM with main dependent variable and sub-variables of EEI and RUI supports the findings of (Prior et al., 2006) which provide that managers involves in GBD due to entrenchment strategy.

Conclusion

Firms may increase environmental disclosure due to legislation, fear of noncompliance, or perceived benefits. This study established the effect of EM on GBD in the context of emerging economies i.e. BRICS countries. First, the relationship of EM and GBD is investigated. Findings of the study revealed a significant positive relationship between EM and GBD, indicating that managers use GBD as a management entrenchment strategy to divert stakeholder's attention to avoid aggressive reactions. Result of the study supports hypothesis H1. The positive relationship between the two variables indicate that firms involved in EM are more likely to engage in excessive disclosure. Second, the moderation effect of CG in the relationship between EM and GBD is also examined. The findings revealed that CG significantly moderates the relationship between EM and GBD, suggesting the positive role of governance characteristics which control the behaviour of opportunistic managers who are involved in unethical practices like EM.

The study has important implications for investors, policy makers and management of the banks. Investors should investigate whether GBD is used as a management entrenchment technique or as a discharge of its responsibility towards corporate citizenship. Management and policy-makers should introduce stringent CG mechanism to monitor the opportunistic behaviour of managers.

Future Research Recommendations

The generalizability of the findings may be restricted due to the small sample size. Future research on environmentally sensitive businesses in a wide number of countries may be done to generalize the findings even further.

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