Moderating Effect of Company Size in Corporate Governance Mechanism and Corporate Social Responsibility Disclosure of Listed Manufacturing Companies in Nigeria

Awoena Felix Dashe, Prof. Jane O. M. Ande, & Dr. Mary A. Ogenyi

Department of Accounting, Faculty of Management sciences,

University of Jos, Nigeria

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ABSTRACT

This study sought to determine the moderating effect of company size in the effect of corporate governance mechanism on corporate social responsibility disclosure of listed manufacturing companies in Nigeria. The study adopted a post-positivist research philosophy and expost factor research design was used. Secondary data was obtained from financial statements and accounts of listed manufacturing companies from 2010 to 2022 using disclosure check listed adopted from previous studies. The collected data was converted into excel format for easy arrangement into panels. The estimation of the relationship between the variables of the study was achieved using E-view version 10 statistical software. As a panel data, ordinary least square was used to identify the regression model with the highest explanatory power. Findings of the study revealed that company size positively and significantly moderate the effect of corporate governance mechanism on corporate social responsibility disclosure of listed manufacturing companies in Nigeria. The study recommended that corporate affairs commission and the manufacturers association of Nigeria should put up adequate regulatory framework and guidelines to ensure more disclosure of corporate social responsibility activities of the manufacturing sector is achieved Nigeria.

Keywords: Corporate governance, Company size, Moderator variable, Corporate social responsibility disclosure, and Sustainability

INTRODUCTION

The waves of industrial activities with their negative impacts on natural resources, environment, and humans have generated major concerns from various stakeholders. The international labour organisation, organisation for economic cooperation and development, and the global reporting initiative who have continually expanded awareness around the world on best industrial practices and global warming reduction imperatives have placed serious demands on companies to disclose more environmental and social information of their operations.

This demands for more disclosure is informed by the pressure on natural resources. Manufacturing operations also give rise to different atmospheric emissions such as; pollutants, greenhouse gas production, as well as dust and noise, constituting serious danger to human beings, livestock and even plants. This is aside the solid waste production and inappropriate disposal which have defaced the supposed beautiful environment, constituting serious obstacles to the tourism potentials of the countries. The liquid waste production and disposal in form of discharge of contaminated wastewater, accidental discharges to storm

water, discharge of hot water are also serious environmental and social concerns. The employees' health and safety condition is another serious risk the manufacturing sector has not carefully addressed and disclosed in Nigeria. The employees are frequently exposed to hazardous chemicals with life threatening implications due to poor safety standards and lack of compliance with international best practices. The extend of this disaster and the disclosure of statistics for stakeholders have remained a major setback in the country These have led to series of public outcry, agitations from pressure groups and unions, insecurity, poverty and unemployment (Sanwo-olu, 2020).

In 2018, the Nigerian government brought out a code for corporate governance in Nigeria requiring listed companies to change their governance structure to allow for more transparency and accountability of corporations. Also, the International Financial Reporting Standard (IFRS) which is the global system of financial reporting emphasised on improved disclosure by companies.

Many studies have been conducted in the past on the effect of corporate governance mechanisms on corporate social responsibility disclosure. As good as the studies are, they are not based on Nigerian economic environment and are characterised by inconsistencies of findings.

Country specific studies are important here because of the uniqueness of countries' differences in terms of culture, population, nature of economic activities, and rules and regulations which could impact differently on manufacturing activities and it's response to corporate social responsibility disclosures (Trojanowski, (2016). Similarly, Yousra (2017) submitted that, the scope of reforms addressed in countries may vary in terms of local context, history, experience, nature of the industry and the legal framework that controls the industrial activities. This further implies that corporate social responsibility disclosure will vary according to local context, and therefore, a study conducted in one country may not be easily absorbed for another country. These call for country's specific empirically tested studies to determine the effect of corporate governance mechanism on corporate social responsibility disclosure of manufacturing companies, while moderating for company size in the interaction between the independent variables and the dependent variable. Most studies came across in Nigeria presented inconsistent results and the studies were hardly pegged by any moderating factors.

The results of the Nigerian studies have created the need for further research using a moderator variable to determine how it alters the effect of the independent variable (corporate governance mechanism) on the dependent variable (corporate social responsibility disclosure) of listed manufacturing companies in Nigeria. For instance, in this current study, board size is one of the variables of corporate governance and Abdul and Rahman (2018) and Al-Maeen, Ellili and Nobanne (2022) found a positive relationship between Board Size and corporate social responsibility disclosure, while Davidson and Dadalt (2017) found a negative relationship. These are clear evidences that the debate is not conclusive as different researchers are still presenting different positions and in some cases, opposing opinions.

Based on the foregoing, few studies looked at the effect of control variables (companies' financial leverage, profitability and turnover) in determining the interaction between corporate governance and corporate social responsibility disclosure. This is another gap that needed to be explored with a further research as the absence of control variables in previous researches in Nigeria could account for the inconsistency in the findings of those researches.

In order to fill the gaps in the existing literature as highlighted in the forgoing paragraphs, the researcher is motivated to determine the effect of a moderator variable as well, which is the third party variable, in the effect of the independent variables on the dependent variable. The objective of the moderator variable is basically to measure the strength of the effect of corporate governance mechanism on corporate social responsibility disclosure of listed manufacturing companies in Nigeria. Despite the inconsistencies in the findings of previous researches on the effect of corporate governance mechanism on corporate social

responsibility disclosure, company size has not been used as a moderator variable in all the studies reviewed in the Nigerian context of manufacturing business.

It is based on this background that the researcher is motivated to determine the effect of corporate governance mechanism on corporate social responsibility disclosure and the moderating effect of company size in listed manufacturing companies in Nigeria.

Theoretically, though moderators offer a good perspective on the connection between corporate governance mechanism and corporate social responsibility disclosure, empirical evidence is limited in Nigerian context. The moderator variable of company size may have a potential effect on disclosure practices as prescribed by the agency theory.

HYPOTHESES DEVELOPMENT

Company size

Company size can be identified as an important variable which affects the level of corporate disclosure. Agency problem can be efficiently controlled by small noncomplex organisations (Porter & Kramer, 2015). Therefore, it suggests that if the firm size is small, then the agency cost also will be decreased. Therefore, to avoid this agency conflict, larger firms may disclose more voluntary information and this suggestion is supported by (Jamali & Misjak, 2019). These studies explain the reasons behind having this kind of relationship. Firms incur more cost to prepare and disclose the corporate social responsibility information and such are financial burden to small firms, but large firms can incur that expenditure without such significant burden (Porter & Kramer, 2015). Furthermore, more than the small firms, larger firms rely on financial markets to enhance funds and therefore for that purpose they are naturally required to disclose more information (Habbash, Hussainey & Awad, 2016). Studies such as Abdul and Rahman (2018), Hossain and Hammami (2009), Bhasin, Makarav, and Orazalin (2012), Uyar (2013) identified the positive relationship between firm size and corporate disclosure level. However, studies such as Haniffa and Cooke (2015) identified that size is not a significant factor which determines the level of corporate disclosure.

Independent Directors

An Independent director is a non-executive director who represents a strong independent voice on the board of directors and his/her decisions and judgments are free from any relationships or interest in the company and its management. Other criteria for non-executive directorship according to the principles in NCCG (2018) includes: not being a representative of a shareholder that has the ability to control or significantly influence management; not being an employee of the company or group within the last five years; not being a close family member of any of the company's advisers, directors, senior employees, consultants, auditors, creditors, suppliers, customers or substantial shareholders; not having and have not had within the last five years, a material business relationship with the company either directly, or as a partner, shareholder, director or senior employee of a body that has, or has had, such a relationship with the company; has not served at directorate level or above at the company's regulator within the last three years; does not render any professional, consultancy or other advisory services to the company or the group, other than in the capacity of a director; does not receive, and has not received additional remuneration from the company apart from a director's fee and allowances; does not participate in the company's share option or a performance-related pay scheme, and is not a member of the company's pension scheme; and has not served on the board for more than nine years from the date of his first election. The above principles or conditions of independent non-executive directorship are believed to be necessary for decisions in a company to reflect the interest of all stakeholders including the community in terms of social and environment activities.

The strength of corporate governance is measured as the proportion of independent directors on the board.

Cheng and Courtenay (2016) and Chan, Watson and Woodliff (2014) found that boards with a larger proportion of independent directors are significantly and positively associated with higher levels of voluntary disclosures. Their position is also in line with the principles of agency theory where a higher proportion of independent directors enhance voluntary financial reporting (Barako, 2016). The reason for this is that the presence of independent directors reduce the cost of voluntary information because directors are generally independent of the day-to-day business operations of the firm. García-Sánchez, etal (2022) stated that independent directors are critical in decisions focusing on minimising agency cost by their extensive knowledge and experience. Haniffa and Cooke (2015) argued that an independent board serves as an important check and balance mechanism in enhancing boards' effectiveness. This view is further strengthened by the assertion of Eng and Mak (2013) who argue that sound governance by independent board of directors influence the quality of financial reporting.

H_{O1}: Company size does not moderate the effect of independent directors on corporate social responsibility disclosure of manufacturing companies in Nigeria

Female directors

Researchers such as Mohammad and Nasiru (2018), Furlotti, Mazza, Tibiletti and Triani (2019), Rao (2016) and McGuinness, Vieito and Wang (2017) are strong advocates of board diversity. The considerable participation of female in all the activities around the world have noticeably increased with greater impact. As a result, female proportion in the board for diversity of opinions and wider consideration of issues is paramount. Agency theory and social role theory are strong advocates of female directorship, which according to Carter, Sinkins and Simpson (2017) enhances board effectiveness. At this juncture, board gender is considered as one of the diversity variables. Having female in the board have some benefits such as embedding diversity and enhancing the opportunity of achieving competitive advantage (McGuinness, Vieito & Wang, 2017). With respect to the corporate social responsibility activities and disclosures, the majority of the previous studies found that female directors enhance the CSR activities (McGuinness, Vieito & Wang, 2017); CSR rating (Bear, Rahman & Post, 2015); CSRD quality of environmental reporting (Oba & Fodio, 2018). Ali, Rehman, Kanwal, Naseem and Ahmad (2021) found that better corporate citizens have greater proportion of female directors in their boardrooms. Having female in the boards may be considered as the consciousness signal of the firms about issues related to legitimacy (Furlotti, Mazza, Tibiletti & Triani, 2019). Firms with more female directors serving in the board have higher level of charitable giving (Shahab, Gull, Rind, Sarang & Ahsan, 2022). Also, women on the board are believed to have better supports for conducive work environments (Ludwig & Sassen, 2022).

H_{O2}: Company size does not moderate the effect of female directors on the board of directors on corporate social responsibility disclosure of manufacturing companies in Nigeria

Foreign directors

A foreign director is a member of the board of directors of a company resident in a country other than his country of origin. This is necessary for cross country investment and experience in management and monitoring. Hassan (2014) suggests that firms with foreign directors are taking on reforms towards a more Anglo-American corporate governance system. According to the study, these reforms include equity-based performance measures, changing the board formation and responsibilities as well as the communication with stakeholders. This is considered by McGuinness, Vieito and Wang (2017) as a good development since it is not just American and British investors which propose the implementation of the Anglo-American corporate governance system, but also investors in developing countries have been shown to promote this system when considering investment.

Cross listing of firms enables foreign shareholders to buy a large share of the firm stocks needing

management and monitoring involvement. A large shareholder from the foreign country can afford more active monitoring by placing members on the board, mainly outsider directors, while a smaller shareholder might not be able to afford this arrangement (McGuinness, Vieito & Wang, 2017).

Even though larger foreign shareholders tend to use their power to obtain benefits that do not accrue to smaller shareholders, these negative effects are mitigated by the fact that large foreign shareholders are outsiders and can therefore perform their monitoring duty in a more unbiased way (Haniffa & Cooke, 2015). This means that foreign directorship strengthen the independence of board of directors. Furthermore, cross-listing on foreign markets enable the firm to take advantage of shareholders buying a large stake in the company and provides a monitoring effect, while being at arm's length regarding management compensation and thus increasing the value of the firm (Simmons, Crittenden, Schlegelmilch, 2018).

For firms not having the funds to complete a foreign listing, Al Maeeni, Ellili and Nobanee (2022) discussed the possibility of having a foreign director from a more demanding corporate governance system to signal its willingness to improve the monitoring opportunities by including foreign outsider members on the board. They further opined that the board becomes more active and more independent from management by including one or more foreign board members. Finally they added that including at least one outside foreign director on the board strengthens foreign investors' confidence, and this will eventually lead to an increase in CSRD and firm value. This implies that foreign directors enhance the quality of corporate governance. The effects of foreign directors were especially apparent in firms that are older, larger and also in specific industries such as the manufacturing, Information Technology and Telecom sectors (Al Maeeni, Ellili & Nobanee, 2022).

H_{O3}: Company size does not moderate the effect of foreign directors on the board of directors on corporate social responsibility disclosure of manufacturing companies in Nigeria

Leverage

The problem of information asymmetry and agency cost exist between creditors and company (Jensen & Meckling, 1976). Therefore, to cope with this problem management should disclose more information, thus, establishing a positive relationship between leverage and CSR disclosure. Before providing any loans the lenders and creditors asked more information from the companies (Naser et.al. 2002), therefore the firms who have intention to obtain more debts disclose more information in their annual reports. Findings of Naser, et.al. (2002); Razek (2014) supported this empirical expectation. Contrary to that expectation Uyar, et.al. (2013) and Habbash, et.al. (2016) identified the negative relationship between leverage and CSR disclosure. Furthermore, Leventis and Weetman (2004) identified that there is no relationship between leverage and the CSR disclosure level.

H_{O4}: Company size does not moderate the effect of leverage level on corporate social responsibility disclosure of manufacturing companies in Nigeria

Profitability

Profitability is the returns on investment at a given time. It is determined as Net Profit Margin (NPM), which is a ratio used to measure the profit margin on sales. NPM is a ratio used to measure profits by comparing the net income after interest and taxes with sales (Moslemany & Menan, 2017). Profitability measurement in this context is used to demonstrate the stability of the entity to generate revenue on sales levels. By examining the profit margins in the previous year, we can assess the operating efficiency and pricing strategies as well as the status of corporate competition with other companies. The operating efficiency of the company determines the amount of profit generated because it measures how big and maximum the company uses its resources. High profit margin is preferred because it shows that the

company got a good result exceeding the cost of goods sold (Malik & Nadeem, 2014). High profitability will demonstrate the company's ability to generate profits on certain sales levels while a low profit value reflects the low level of sales to a certain cost level and are considered inefficient. Profitability and corporate social responsibility performance has been a subject of debate since the 1960s, and whether or not profitability acts as the driver to influence corporate social responsibility disclosure is still a matter of investigation (Jamali & Mishak, 2017). There have been arguments related to the extent on how CSR reporting is measured in relation to company's profitability. Various models have been offered to explain determinants of profitability (McWilliams & Siegel 2016).As such, further scrutiny is needed, in order to justify the appropriate measurement on this relationship in a specific context.

H_{O5}: Company size does not moderate the effect of profitability on corporate social responsibility disclosure of manufacturing companies in Nigeria

METHODOLOGY

This study employs expos facto research design. The unit of analysis is listed manufacturing companies in Nigeria. This study employs expos facto research design because it involves the use of secondary data and seeks to find the relationship between the independent variable (corporate governance mechanism) and the dependent variable (corporate social responsibility disclosure) after the action has already occurred. Expos facto attempts to discover the pre-existing causal conditions between groups and it is preferred in this study because the study used quantitative data as proxies for independent, moderating dependent variables. Suwana, Purnomosi and Mardiati (2017), Ahmed (2017), Ridwan and Mayapada (2022), and Zheng, Rashid, Siddik, Wei and Hossain (2022) are among the many researchers that have used expos facto research design for similar studies.

The population of this research consist of listed manufacturing companies on the Nigerian Exchange Group. There are 58 listed manufacturing companies on the Nigerian Exchange Group (NXG, 2021). The population is captured as Appendix B1: List of the target population of the study. The study used convenient sampling techniques to select 15 listed manufacturing companies in Nigeria. Previous researches such as: Uwuigbe (2011), Marwa (2014), Khan, etal (2022) and Wang, etal (2022) have also used simple random sampling technique in their similar studies.

The checklist is considered valid and reliable as it is adopted from published work of previous researchers on similar topic. Therefore, the disclosure checklist used as instrument for data collection in this study is adopted from Michael (2019). The checklist is attached as Appendix A.

The data for the study was collected through content analysis of the financial reports and accounts of listed manufacturing companies in Nigeria. According to Riffe, Lacy and Fico (2014), conducting a content analysis requires careful preparation of a corpus of texts for analysis. The content analysis was done by coding, which according to Krippendorff (2014), involves determining a set of instructions about what features to look for in a text and then making the designated notation when that feature appears. Accordingly, a firm that disclosed an item of corporate social responsibility activities was allotted (1) while a firm that did not disclose an item of corporate social responsibility activities was allotted (0). This coding system adopted is as prescribed by Akhtaruddin and Rouf (2012); Muhammad, Salman, Amir and Fizzah (2017).

The collected data was converted into excel format for easy arrangement into panels. According to Kothari (2014) panel analysis achieve better regression results since the researcher is better able to control against unobserved hererogeneity while also giving a cross sectional and time series dimension. The data were subjected to both descriptive and inferential analysis. The estimation of the relationship between the variables of the study was achieved using E-view version 10 statistical software. As a panel data, ordinary

least square was used to identify the regression model with the highest explanatory power. According to Hair, Hult, Ringle and Sarstedt (2013), ordinary least squares (OLS) path modelling is widely used by many research fields such as management, social sciences, education, and physical sciences. As a secondary data involving the use of panel statistics, the Hausman specification test for determining whether fixed effects model is more appropriate than random effects model or otherwise was used.

Models of the study

From review of literatures, a company's corporate social responsibility disclosure can be affected by several generic factors. Therefore, it is necessary to investigate the influence of this factors, which in this case is the corporate governance mechanism.

In order to test for the relevance of the hypotheses regarding the effect of corporate governance mechanism on corporate social responsibility disclosure of manufacturing companies listed on the Nigeria Exchange Group, the following regression models as in Onwumere (2009), Argyrous (2005) which examines the relationship between a dependent variable and two or more regressors or independent variables is adopted.

$$Y = b_0+b_1X_1+b_2X_2 +b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + £ \quad – \quad – \quad (1)$$

The introduction of moderator variable of company size (CSize) gives rise to:

$$Y = b_0+b_1*CsizeX_1 +b_2*CsizeX_2 +b_3*CsizeX_3 + b_4*CsizeX_4 + b_5*CsizeX_5 + £ \quad (2)$$

Where Y is the dependent variable of corporate social responsibility disclosure.

X is the independent variables which represents the components of corporate governance as: X_1 = Independent Directors (ID); X_2 = Female on Board (FeD); X_3 = Foreign Directors (FoD); X_4 = Financial Leverage (LEV); and X_5= Profitability (ROA).

£ is the error term capturing other explanatory variables not explicitly included in the model.

b_0 is the intercept of the regression.

b_1, b_2, b_3 . . . are the coefficients of the regression.

$$CSRD_{i\ t} = f(ID_{it}, FeB_{it}, FoD_{it}, LEV_{it}, CSIZE_{it}, ROA_{it}, \varepsilon_{it}) \quad – \quad – \quad – \quad (4)$$

Where i = total number of manufacturing firms; t=time period covered (measured in number of years) with

i = 1… N

t = 1 … T

ε_{it} = error terms

The Panel data model showing the functional relationship between the dependent and independent variables developed is depicted in equation (2). The technique of dummy variable can be extended to panel data (Gujarati, 2004; Nwobu, 2017). The independent variables in this study are a mix of qualitative and quantitative regressors. According to Gujarati (2004), regression models containing a mix of qualitative and quantitative variables are called Analysis of Covariance (ANCOVA) models. In line with Allison (2009), fixed effects model can be used in estimating a dependent variable and predictor variables (with a mix of quantitative and qualitative attributes). In Allison (2009), the predictor variables were mainly dummy

variables. This makes panel data analysis suitable in the current study.

To estimate equation (6), the fixed and random effects are required. However, the Hausman test is estimated to determine the most efficient technique between fixed effect and random effect. A prior expectations is follows:

$\beta 1 > 0$; $\beta 2 > 0$; $\beta 3 > 0$; $\beta 4 > 0$; $\beta 5 > 0$; $\beta 6 > 0$; $\beta 7 > 0$; $\beta 8 > 0$;

Descriptive statistics of the variables

The descriptive statistics of the variables are presented in Table 1 which observed that for fifteen selected listed manufacturing companies in Nigeria used for the study, average corporate social responsibility disclosure was about 21.2, while the series deviates from the mean by 6.7. This implies that corporate social responsibility disclosure can vary from its mean by about 19.8. The maximum and minimum values of corporate social responsibility disclosure generated over the study period are 10.0 and 36.0, respectively. For independent directors (ID), about 2.33 mean was observed, with a standard deviation of about 1.97. The ID have minimum and maximum board sizes of 3 and 9, respectively. Female directors (FeD) stood at about 14.4 percent mean, with a standard deviation of about 1.6 percent. Minimum and maximum female on board stood at 0 percent and 5 percent of total board. The foreign directors (FoD) has a mean of 1.97 with a standard deviation of 2.3. The minimum and maximum values stood at 0 and 7, respectively. For the control variables LEV and ROA, their respective mean are 47.79 and 62.58 with standard deviation of 186.73 and 88.21 respectively.

Table 1 Descriptive Statistics result

	CSRD	ID	FeB	FoD	LEV	CSize	ROA
Mean	21.24812	2.330827	1.443609	1.969925	47.78902	50.18594	14.92120
Median	20.00000	3.000000	1.000000	1.000000	14.94000	19.70000	7.000000
Maximum	36.00000	9.000000	5.000000	7.000000	2147.250	343.9000	104.0000
Minimum	10.00000	0.000000	0.000000	0.000000	-11.00000	0.020000	-68.45000
Std. Dev.	6.717690	1.964541	1.602146	2.309204	186.7312	74.74935	22.95876
Skewness	0.566532	0.759810	0.851450	0.963090	10.80927	2.226257	1.879039
Kurtosis	2.588502	3.555118	2.704760	2.538356	121.9793	7.564791	9.674624
Jarque-Bera	8.052942	14.50477	16.55316	21.74152	81038.16	225.3363	325.1504
Probability	0.017837	0.000708	0.000254	0.000019	0.000000	0.00000	0.000000
Sum	2826.000	310.0000	192.0000	262.0000	6355.940	6674.730	1984.520
Sum Sq. Dev.	5956.812	509.4436	338.8271	703.8797	4602647.		69577.81
						737545.4	
Obser.	133	133	133	133	133	133	133

Source: Author's Computation, 2023 (Eview-10)

Table 1 the p-value for the Jarque-Bera statistics for CSRD, ID, FeD, and FoD were 0.03, 0.00, 0.00, and 0.00 respectively. They were all less than 0.05. This implies that the data were normally distributed. Similarly, the p-value for the Jarque-Bera statistics for the control variables and moderating variable: LEV, ROA and CSize are 0.00, 0.00 and 0.00 respectively. They were all less than 0.05. This implies that the data were normally distribute, which indicates that the data can further be processed for policy decisions.

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Correlation Matrix

The matrix in Table 2 shows how the variables in the model interact with one another. However, for this study, the emphasis is on the relationship between the dependent variable and the independent variables. The diagonal of the matrix is a set of 1 because the correlation between a variable and itself is always 1. In other words, the correlation matrix is symmetrical. The correlation coefficient ranges between –1 and 1.

Table 2 Correlation matrix of the variables

	CSRD	BOD	ID	FeD	FoD	AC	LEV	CSIZE	ROA	GRSALE
CSRD	1.000000									
BOD	0.000906	1.000000								
ID	-0.613605	0.103962	1.000000							
FeD	-0.162344	0.658319	0.056518	1.000000						
FoD	0.194854	0.451820	0.155845	0.122399	1.000000					
AC	0.246365	0.618096	-0.038008	0.321797	0.485144	1.000000				
LEV	-0.050579	0.128375	0.060609	0.119586	-0.026412	0.110403	1.000000			
ROA	-0.156911	0.153558	0.014085	0.105520	0.337555	0.141383	0.106749	-0.004556	1.000000	
GRSALES	0.270947	0.654389	0.127167	0.457873	0.152256	0.473359	0.028672	0.771129	-0.089020	1.00000

Source: Author's Computation, 2023 (Eview-10)

The correlation matrix presented in Table 2 shows a more feeble negative relationship between CSRD and ID, with correlation coefficient approximating -0.613605. Furthermore, with a coefficient of 0.194854, the matrix shows a weak positive relationship between CSRD and FoD. The correlation test presents an inverse connection between CSRD and FeD, with a coefficient of -0.162344. A very weak positive relationship between CSRD and AC was also observed, with a coefficient of 0.246365. Finally, the result shows a weak negative association between CSRD and LEV, with a coefficient of -0.050579. From the correlation matrix, the relationship among the independent variables does not suggest multi-collinearity, which indicates that the data can further be processed for policy decisions. This is indicated by the reasonably moderate values of the associated coefficients.

Unit Root Test

To evaluate stationarity or non-stationarity of variables, Lin, Levin, and Chu tests were used. The results of the tests for all the variables in the model are shown in Table 3.

Table 3 LLC Unit Root Test

Variables	Statistics	P-Value	Order of Integration
CSRD	2.3208	0.0101	1(0)
ID	2.84114	0.0022	1(0)

FeB	3.55099	0.0002	1(0)
FoD	3.17595	0.0007	1(1)
LEV	3.83342	0.0001	1(0)
ROA	4.26349	0.0000	1(0)

Source: Author's Computation, 2023 (Eview-10)

From table 3, Variables CSRD, ID, FeD, AC, LEV, CSIZE, and ROA based on LLC Tests, we found the stationary level I (0), but variables FoD are not at the stationary level. However, the variable FoD is found stationary at first difference 1(1)

Co-integration Estimate

The Kao residual Co-integration test was used to test the long run relationships among the variables in table 4.

Table 4 Kao Residual Co-integration Test result

			t-Statistic	Prob.
ADF			-2.498127	0.0092
Residual variance			2.714031	
HAC variance			2.486331	

Source: Author's Computation, 2023 (Eview-10)

From table 4, the Panel ADF-Statistic-2.498 with p-value 0.0092 test H_0 hypothesis suggesting lack of co-integration is rejected, and co-integration or the existence of long-term equilibrium relationship between the variables of the model is accepted. Thus, the model shows a long-run equilibrium relationship among the variables used in the analysis. It shows that the variables move together in the long run.

Pooled regression

In conducting panel data regression, the pooled, fixed effects and the random effects regression were all estimated. The redundant fixed effects tests was conducted to choose the best between pooled and fixed effects regression. Also, the Hausman test was conducted to choose the best between fixed effects and random effects regression.

Table 5 Pooled regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.62350	1.431705	21.38953	0.0000
ID	-2.554169	0.161755	-15.79037	0.0000
FeD	-0.723956	0.250923	-2.885175	0.0046
FoD	1.293985	0.170734	7.578945	0.0000
AC	0.222537	0.277705	0.801343	0.4245
LEV	0.002735	0.001602	1.706912	0.0904
CSIZE	0.016487	0.006712	2.456506	0.0154
ROA	-0.053094	0.013826	-3.840207	0.0002

R-squared	0.771538	Mean dependent var	21.24812
Adjusted R-squared	0.754821	S.D. dependent var	6.717690
S.E. of regression	3.326300	Akaike info criterion	5.313809
Sum squared resid	1360.905	Schwarz criterion	5.531129
Log likelihood	-343.3683	Hannan-Quinn criter.	5.402120
F-statistic	46.15363	Durbin-Watson stat	2.082310
Prob(F-statistic)	0.000000		

Source: Author's Computation, 2023 (Eview-10)

The pooled regression or Ordinary Least Square (OLS) estimation is presented in table 10. The pooled OLS regression model seems to fit the data reasonably well with the R^2 of 0.77 meaning that about 77% of the regressants can be explained by the independent variables. BSize, ID, FeD and ROA have a negative and significant impact on CSRD. FoD have a positive and significant relationship with CSRD. However, LEV appears insignificant in this result. The F-statistics 46.15 with the p-value 0.000 implies that corporate governance mechanism has a significant impact on the corporate social responsibility disclosure of listed manufacturing companies in Nigeria. The Durbin Watson test for the model implies that there is no autocorrelation among the variables

Correlation of the dependent and explanatory variables

Correlation matrix of the dependent and explanatory variables test was conducted to eliminate possibility of having collinear explanatory variables in the study. The correlation coefficient matrix for the entire study variables was estimated. The estimated correlation coefficient value of 1 indicates perfect correlation between the variables. The estimated correlation coefficient value of -1 indicates perfect negative correlation between the variables. The estimated correlation coefficient value closer to 1 or -1 indicates strong positive or negative correlation between the variables. Correlation coefficient value closer to zero indicates weak positive or negative correlation among the variables. The correlation matrix test results are presented in table 5

Table 5 Correlation of the dependent and explanatory variables result

	ID	FeD	FoD	LEV	ROA	ID*Cs	Fe*Cs	Fo*Cs
ID	1.00							
FeD	-0.31	1.00						
FoD	0.16	-0.04	1.00					
LEV	0.12	0.22	0.00	1.00				
ROA	-0.31	0.02	0.13	-0.22	1.00			
ID*Cs	0.43	-0.11	0.54	-0.14	0.17	1.00		
Fe*Cs	0.17	0.77	-0.25	-0.08	0.09	0.44	1.00	
Fo*Cs	0.19	0.15	0.09	0.68	-0.10	0.43	0.41	1.00

Source: Author's Computation, 2023 (Eview-10)

Table 5 provides summary of the coefficient of correlation for all the explanatory variables, the moderating variable and the control variables. The results showed strong positive correlation between corporate social responsibility and female directorship by correlation coefficient of 0.45. This implies that manufacturing companies with higher number of female directors are likely to disclose more corporate social responsibility

activities in comparison with lower number of female directors on the board of directors. The negative correlation between foreign directorship and corporate social responsibility disclosure may imply manufacturing companies are highly likely to disclose less corporate social responsibility activities with more foreigners as board of directors. Additionally, as manufacturing companies increase their leverage ratio, they are more likely to increase corporate social responsibility disclosure as indicated by positive correlation coefficient between financial leverage and corporate social responsibility disclosure. This is followed by correlation coefficient between female on board variable and corporate social responsibility disclosure moderated by company size variable at a value of 0.77. Others are; board size variable at a value of 0.75, and foreign directors' variable and leverage moderated by company size variable at a value 0.72.

The hausman test for fixed and random effects model estimations

Hausman test is a test statistics for endogeneity by directly comparing fixed and random effects estimates of coefficient values. It helps in deciding the most appropriate model between fixed effect model (FEM) and random effect model (REM). Table 6 shows the results of the Chi-square test statistics, their corresponding degree of freedom and p-value for model equation 1 and equation 2.

Table 6 Hausman test model of effects estimations

Model specification	Chi-square statistics	Degree of freedom	P-value
Model (1)	73.841925	8	0.0000
Model (2)	94.921746	14	0.0000

Source: Author's Computation, 2023 (Eview-10)

This test estimates in table 6 shows that the random effect model is more appropriate at 5% level of significance. The chi-square for model 1 and model 2 equations showed 73.84 and 94.92 respectively. The corresponding p-values were 0.0000 each at statistical significance of 5%. This implies that the study rejected the null hypotheses that random effect model was most appropriate for statistical analysis model for equations (1) and (2) at 5% level of significance. Therefore, the fixed effect model proved to be the most appropriate model for both equations (1) and (2).

Panel model regression

After conduction the panel data specification tests and taking necessary remedial actions to correct any violation of the cardinal OLS requirement identified, the research undertook panel regression analysis. The study overall objective was to determine the effect of corporate governance mechanism on corporate social responsibility disclosure, and to establish the moderating effect of company size on the effect of corporate governance mechanism on corporate social responsibility disclosure of listed manufacturing companies in Nigeria. The researcher tried to achieve the objectives of the study by estimating two panel equations: equation (1) and equation (2) for fixed effects as guided by hausman test result. Then, the researcher tried to compare the panel results of the two equations to determine if moderation effect occurred among the elements of corporate governance variables and corporate social responsibility disclosure after the first model is estimated without the moderating effect. According to Muigai (2016), the moderating effect is significant if the coefficient of determination (R^2) of the moderated regression is higher than that of the initial regression equation and the coefficients of the moderated variables are statistically significant. Also, Saunders, Lewis and Thomhill (2009) in Maigai (2016) categorised moderation effect on the relationship between the independent variable and the dependent variable into three: antagonistic (reversing) moderating effect- when increasing moderator variable decreases the primary effect of the explanatory variables on the dependent variables, enhancing moderating effect- when increasing the moderator variable increases the

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primary effect of the explanatory variables on the dependent variable, and buffering (decreasing) moderation effect- when increasing the moderator variable decreases the primary effect of explanatory variables on the dependent variables.

Table 7 Panel fixed effect regression results

Dependent variable: Corporate social responsibility disclosure Method: Generalised Method of Moments 2SLS instrument weighting matrix			
Variables	Equation 1a Coefficient (P-value)	Equation 1b Coefficient (P-value)	Equation 1c Coefficient (P-value)
Constant			0.164391*** -0.0010
Lagged CSRD	0.674289*** (0.0000)	0.635216*** (0.0000)	0.75502*** (0.0000)
FeD			0.174289** (0.0216)
ID	-0.614258*** (0.0005)	-0.634229*** (0.0007)	-0.54289** (0.0213)
FeD	0.42730*** (0.0000)	0.553214*** (0.0000)	0.258910*** (0.0097)
FoD	1.34216*** (0.0000)	1.604133*** (0.0000)	
Statistics:			
Adjusted R-squared	0.70183	0.7019	0.66821

Durbin-Watson stat	1.88341	1.75332	1.91371
J-statistics	420	358	374
Prob (J-statistics)	0.0000	0.0000	0.0000
Total panel (unbalanced)	427	366	377

* means 1% significant level, ** is 5% significant level, *** is 10% significant level

Source: Author's Computation, 2023 (Eview-10)

In order to estimate panel level heteroscedasticity and serial correlation detected in the panel data, a dynamic panel data estimation technique was used instead of Ordinary Least Squares (OLS) because it has the advantage of constant estimators. Accordingly, step-wise model re-estimation of equation (1) was done in order to eliminate the problem of collinearity among the explanatory variables where highly collineared variables are dropped (Gujarati, 2003).

Table 8 Fixed effects regression results moderated by company size

Dependent variable: CSRD			
	Equation 2a	Equation 2b	Equation 2c
Variables	Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)
Constant	-1.2837**(0.399)	0.1741(0.7791)	0.6018*(0.0971)
Lagged CSRD	0.7061***(0.0000)	0.6100***(0.0000)	0.7149***(0.0000)
FeD	0.9164***(0.0105)	0.5593***(0.0174)	0.6227***(0.0172)
ID	-0.5516***(0.0121)	-0.6257***(0.0121)	-0.5496***(0.0038)
FoD	-0.5920***(0.01011)	-0.1296***(0.00200)	-0.1337**(0.0188)
ID*Csize	0.2672(0.0070)		0.44196(0.0241)
FeD*Csize	-0.1223(0.0000)	-1.2471(0.0000)	-1.2467(0.0000)
FoD*Csize	0.569300(0.0173)	0.924403*(0.0105)	0.129612(0.0020)
Statistics			
Adjusted R^2	0.715722	0.72913	0.671024
Durbin-Watson sta	1.744750	1.715331	1.839513
J-statistics	393	325	346
Prob (J-statistics)	0.0000	0.0000	0.0000
Panel(unbalanced) Obs	410	339	358

* means 1% significant level, ** is 5% significant level, *** is 10% significant level

Source: Author's Computation, 2023 (Eview-10)

By comparing table 7 and Table 8, regression results shows the introduction of moderation variable results into the model improvement prediction power as indicated by increase in the coefficient of determination (adjusted R^2) values. This is indicated by improvement of adjusted R2 from 70.18% (equation 1a) to 71.57% (equation 2a), from 70.19% (equation 1b) to 72.91% (equation 2b), and 66.81% (equation 1c) to

67.10% (equation 2c). Also, the J-statistics for the re-estimated equation is statistically significant as indicated by the corresponding p-value of 0.0000.

The table 7 also indicates a positive and statistically significant moderating effect of company size on the interaction between the number of female directors (FeD*Csize) and corporate social responsibility disclosure. This is a statistically significant enhancing effect of moderator variable as the primary effect is positive and the statistical relationship is significant.

The results in table 7 further indicates a positive and statistically significant moderation effect of company size on the interaction between foreign directorship (FoD*Csize) and corporate social responsibility disclosure as indicated by positive coefficient and 1% level of significance. The results indicates that company size has statistically increasing moderating effect on the relationship between the presence of foreign directors on the board of directors of a listed manufacturing company in Nigeria and corporate social responsibility disclosure.

Table 7 further indicates a buffering moderating effect of company size (ID*Csize) on the interaction between the number of independent directors on the board of directors and corporate social responsibility disclosure of listed manufacturing companies in Nigeria. This is shown by positive and statistically significant coefficient from the moderation equations at 5% level of significance.

CONCLUSION

The study therefore concludes that company size play a vital role in moderating the relationship between corporate governance mechanism and corporate social responsibility disclosure of listed manufacturing companies in Nigeria. It further concludes that the leverage level of a company determines the information need of its stakeholders and thus necessitating more disclosure. Profitability is a measurement of performance and disclosure can enhance a company performance as well.

RECOMMENDATION

1. Corporate affairs commission and the manufacturers association of Nigeria should put up adequate regulatory framework and guidelines to ensure more disclosure of corporate social responsibility activities of the manufacturing sector in Nigeria.
2. Nigerian corporate governance code should establish a minimum benchmark for the number of female directors on boards of listed manufacturing companies in order to encourage more sustainability disclosure.
3. Policy makers should promote economic policies that have direct implications on corporate sustainability growth and more disclosure demands of the stakeholders in Nigeria.

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