



CORPORATE SOCIAL RESPONSIBILITY DISCLOSURES AND PROFITABILITY OF NON-FINANCIAL FIRMS IN NIGERIA: MODERATING ROLE OF FEMALE BOARD MEMBERSHIP

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Abstract

This study examined the moderating role of female board members (FBM) on the relationship between corporate social responsibility disclosure and profitability of non-financial firms in Nigeria. An ex-post facto research design was employed for the purpose of this study. The data was obtained from secondary sources through the published annual financial statements of the non-financial firms listed in the Nigeria Exchange Group. The study was conducted for a period of eleven (11) years spanning from 2011 to 2021 and analyzed using STATA version 13.0 as the tool of data analysis. Descriptive and inferential statistics (Multiple regression model) was employed as the techniques for data analysis in the study. The results from the direct relationship showed that local community disclosure had a negative and insignificant effect on return on assets (ROA), while quality assurance disclosure and environmental disclosure had positive and significant effects on ROA. From the perspective of interaction with FBM, the result showed that only quality assurance disclosure had a negative and significant effect on ROA. This finding concludes that FBM can moderate the relationship between quality assurance disclosure and profitability, but not between local community disclosure, environmental disclosure, and profitability. Therefore, what left to be done is that FBM should closely monitor the production process to improve efficiency and control production costs.

Keywords

CSR
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Return on Assets
Female Board Membership

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1. Introduction

Profitability plays an important role in the structure and development of every business organization. Profitability is the measure of financial performance, success and enhances the reputation of a firm (Ahinfu, 2018). Profitability

of corporate entities is a subject that has attracted a lot of attention, comments and interest from financial experts, researchers and the general public (Ali & Stanley, 2016). It needs to be stated at this juncture that the desire for Corporate Social Responsibility (CSR) emerged

when businesses accepted responsibility for their business decisions and operations in a way that does not negatively affect society or the environment (Kruders, 2018). Therefore, CSR is perceived to be a fee charged on the returns derived from the hazards caused by a firm to pay as compensation for some of the rights, such as revenues and the environmental development (Fuller, 2013).

Stakeholders have expressed concern about the investment performance below expectation and productivity of Nigerian non-financial services enterprises (Onuoha, 2019). Non-financial firms in Nigeria that were anticipated to make a profit and improve stakeholders' welfare and livelihood instead recorded losses. Another issue of concern for non-financial firms in Nigeria is the deteriorating nature of firm profit generation, which prevents them from being able to satisfy their financial obligations (Molla et al, 2019). There would be resolution between community members and businesses when they provide CSR related services to communities, informing them of compensation for environmental hazards that would be taken care of by businesses. This would eventually lead to peace and tranquility, and organizations would have conducive environment to operate well, attract customers and invariably result to high profit.

However, in running the affairs of these non-financial firms, both male and female board membership is cogent but available studies especially the work of (Garcia et al., 2018) has documented that female have traditionally been downgraded and even misrepresented on the boards of corporate entities, but after some social and legal pressures, their representation was increased. The introduction of a moderating variable in this study is necessary because of the inconsistent results and differing opinions of earlier studies on the effect of CSR on financial success in Nigeria. Also, there were not enough studies on the moderating role that have been done in emerging nations, particularly Nigeria.

The study on the moderating effects of board participation as measured by female board membership (FBM) on the profitability of all non-financial services firms in Nigeria were not many. This shows that there are influences on the relationship between the independent and dependent variables that were not been taken into account in prior research. One of these elements is board diversity, which FBM is used as a proxy and has the ability to be impartial and objective in corporate decisions.

The primary responsibility of the corporate female board membership is to keep a close eye on management and to ensure that the interests of the company's principals and agents are aligned. According to Section 149 (1) of the Companies Act 2013, every listed company must have at least one female director on its board. According to Chen (2021), it is common for the board of directors to meet on a regular basis to develop corporate management and oversight procedures. Any public or private company, for-profit or not-for-profit, must have at least one female in the board.

According to Onwuamaeze (2021), women had 56 seats (23.4%) out of the 239 board seats available in the top 20 firms during the study period, while men held 183 seats (76.6%). The percentage of women on the board is less than the statutory minimum set by the Central Bank of Nigeria, which is 30%. (Central Bank of Nigeria, 2019). Indeed, it should be noted that extant literatures such as the work of Gunathilaka and Hunawardana (2018), Ahinful (2018) amongst others were some of the studies conducted in abroad specifically; Sri Lanka and Ghana respectively. The aforementioned studies have placed greater emphasis on the examination of direct relationships between CRS and financial performance of listed firms while ignoring the moderating role of FBM. On the other spectrum, Oti and Mbu-Ogar (2018), Ejeje et al. (2021) were some of the few studies conducted in the Nigerian context. However, both studies had dwelled much on direct

relationships between CSR and financial profitability. Thus, the moderating role of FBM has not been examined by the aforementioned studies. Hence, it was against this paucity in literature that this study attempt to examine the moderating role of FBM on the relationship between CSR and profitability of listed non-financial firms in Nigeria. In the light of the aforementioned, the main objective of this study is to examine the role FBM on the nexus between CSR and profitability of non-financial firms in Nigeria.

Hence, it should be noted that optimizing the wealth of capital providers has been the fundamental rule motivating corporate policies, but this has all the time contradicted with other interested parties' expectations. In view of these contradicting expectations, embracing the canons of collective accountability has become necessary.

2. Literature review

Theoretical Framework

Theoretically, stakeholder and agency theories were used to anchor the variables of the study. From the stakeholders' theory perspective, it advocates the consideration of various stakeholders' expectations such as the shareholders, potential investors, managers, employees, customers, suppliers, host communities, the government agencies, analysts, non-governmental organization amongst others. These groups of stakeholders' diverse yearnings and aspirations which are conflicting with each other. However, conflict of interests is one of the major consequences that could arise from engagement of key stakeholders in corporate strategic decisions is conflict of interest in which corporate social responsibility disclosure was not an exception. The agency theory was captured in this study as it conflicts with the stakeholders' prescriptions through emphasizing on management and shareholders relationships exclusively.

Gunathilaka and Hunawardana (2018) studied in Sri Lanka and examined the link between environmental management and profitability. A 5-year study of 30 Sri Lankan enterprises with data from the companies was evaluated using panel model regression with ROA and environmental management as factors. Environmental management showed a strong and favourable relationship with financial success. The study has added to the scholarly literature, yet it contains limitations. The investigation was conducted in Sri Lanka for five years without a moderating variable. The current research will focus on non-financial services organizations in Nigeria for 11 years, up to 2021, with a female director moderating.

Empirical Literature

The effect of community development disclosures on the turnover of non-financial services firms in Nigeria was examined by Ejeje et al. (2021). The data of profitability extracted for the studied firms was analyzed using ANOVA and regression analysis technique, and the results showed that community disclosures has a significant effect on firm profitability after the normality test, serial correlation, heteroskedasticity, and multicollinearity. The study made significant contributions to the literature on the community development aspect of CSR; however, it had gaps. The study used sales revenue as the measure of turnover and no moderating variable, though it served as a guide for the current study, which use ROA as a proxy for profitability and the use of moderating variables.

In their empirical investigation, Okafor, Ngozi and Adusie (2021) provided quantitative proof on the positive impact of corporate social responsibility on financial performance of listed technology firms in United States of America (U.S.A). The study employed content analysis, fixed-effects and pooled regression models to analyze the impact of engaging in CSR on tech firms' financial performance in the United

States. The study obtains panel data from the big one hundred (100) technology firms listed on the New York Stock Exchange (NYSE) for the period of three (3) years spanning from 2017 to 2019. The result shows that corporate social responsibility has positive significant impact on financial performance of listed technology firms in U.S during the period of the study. It was concluded that technology firms that strongly engage on corporate social responsibility are more inclined to have increase in turn over and ultimately, financial performance. Despite the rigorosity of this study, the outcome variable (financial performance) was proxied by Tobin's Q whereas, returns on assets (ROA), Return on Equity (ROE) amongst other strong parameters were neglected as proxies for financial performance.

Similarly, Sekhon and Kathuria (2020) examined the effect of Corporate Social Responsibility on financial profitability in the Indian context. Employing a panel data from big 137 firms from CNX-500 for a period of ten (10) years ranging from 2008-2017. The effect of corporate social responsibility on three (3) measures of financial profitability; Return on Assets (ROA), Return on Equity (ROE) and Net Profit Margin (NPM). Panel data regression analysis was employed as the techniques for data analysis while content analysis was employed to obtain data on CSR from the audited financial statements of listed firms in India. Results from the study revealed that effect of CSR on financial profitability was neutral in case of ROA and NPM. However, CSR has significant negative effect on ROE. Nevertheless, the study cannot be generalized as the data for analysis was restricted to 2017. Thus, there was a period lags for more than five (5) years which have not been captured in the study. By, employing recent data, more reliable empirical evidence could have been established.

Ahinful (2018) investigated the profitability of small and medium-sized businesses in Ghana using environmental management techniques.

The study then examined the nature and scope of environmental management practices (EMPs) in Ghanaian organizations, as well as the barriers to EMP adoption in Ghana. The study examined data from 238 Ghana Stock Exchange companies using regression analysis and social science statistical software (SPSS). According to the findings, there was a negative but significant relationship between environmental management practices and the profitability of Ghanaian small and medium enterprises (SMEs). Despite flaws, the work has contributed to the scholarly literature. The study was carried out in Ghana, which, despite being an African country, has varying environmental legislation and used SPSS for data analysis. The current study concentrated on Nigerian non-financial services firms for eleven years ending 2021.

Oti and Mbu-Ogar (2018) investigated the effect of operation and social disclosure on the profitability of listed oil and gas companies in the NGX for the period from 2012 to 2016 with the data for community development, waste management, employee health and safety, and return on capital employed (ROCE) for five (5) were extracted from their annual report. The acquired data were analyzed with the assistance of ordinary least squares (OLS) regression analysis method, and the outcome revealed that disclosure on employees' health & safety (EHS) together with community development do not have significant effect on the profitability of firms. However, disclosure concerning the management of waste reflects significantly and positively on the profitability of companies. However, the data collected stopped in year 2016 while the number of listed firms employed as sample of the study were just five firms and hence, the result is outdated and cannot be generalized to other firms within the sector. The present study terminated in 2021 covering 11 years, and a female director was employed to moderate the nexus between dependent and independent variables.

3. Methodology

This study used an ex-post facto research design, with a population of 74 non-financial services firms on the Nigeria Exchange (NGX) as of 31st December, 2021. Indeed, purposive sampling technique was employed to arrive at the sample size of 41 listed non-financial firms for the period of 2011 to 2021. The non-financial firms were selected in view of their enormous contribution to the Nigeria's Gross Domestic Product (GDP) and the country's economic growth at large. The period of the study was chosen as it was adequate enough to capture the series of economic and socio-political events that have taken place during the period. The multiple regression technique model was used as to analyze the data as it provides the basis for testing both the descriptive and inferential statistics of the study.

Model Specification

In order to test the null hypothesis which stated that female board membership (FBM) has no significant impact on the nexus between corporate social responsibility and profitability

of listed non-financial firms in Nigeria, this study adapted moderated regression model from Molla (2021). Therefore, this study developed the model to examine the moderating role of FBM on the nexus between CSR and profitability of listed non-financial firms in Nigeria. The following econometric model were specified as follows;

$$ROA_{it} = \beta_0 + \beta_1 LCD_{it} + \beta_2 QAD_{it} + \beta_3 ED_{it} + \beta_4 FBM_{it} + \beta_5 FSIZ_{it} + \varepsilon_{it} \quad 1$$

$$ROA_{it} = \beta_0 + \beta_1 LCD_{it} + \beta_2 QAD_{it} + \beta_3 ED_{it} + \beta_4 FBM_{it} + \beta_5 FBM \square LCD_{it} + \beta_6 FBM \square QAD_{it} + \beta_7 FBM \square EDI_{it} + \beta_8 FSIZ_{it} + \varepsilon_{it} \quad 2$$

where ROA = return on equity; LCD = local community disclosure; ED = environmental disclosure; FBM = female board membership; FSIZ = firm size; β_0 =Constant; β =Regression Coefficient; ε = error term; i =Observation; t= Year of observation. The variables used for this study are clearly defined with their measurement stated in Table 1.

Table 1: Variables, Definition, Measurement and Sources

Variables	Definition	Measurement	Sources
<u>Dependent</u> Return on Assets (ROA)	A profitability ratio that provides how much profit a firm is able to generate from its assets	Measured as earnings before interest and tax divided by the firm's total assets	JavED and Lefen, 2019; Tabash, Yahya & Almaqtari, 2020.
<u>Independent</u> Local Community Development (LCD)	Firm's effort to empower individuals and group of people with the skills they need to make changes within their communities	Measured as Ratio of disclosure score of individual firm to maximum score obtainable for community development activities	Enya, Inyang & Inyang, 2021; Ni, Egri, Lo & Lin 2015; Nwoba & Udoikah, 2016.
Quality Assurance Disclosure (QAD)	Part of quality management focused on providing confidence that quality	Measured as Ratio of disclosure score of individual firm to maximum score	Usman & Amran 2015; Suchanek, Richter, & Kralova, 2014; Petr, et al. 2015.

Environmental Disclosure (ED)	requirements will be fulfilled Communicating the social and environmental impacts of the economic activities of the firm on society	obtainable for product quality Measured as Ratio of disclosure score of individual firm to maximum score obtainable for environmental disclosures	Ong, Teh, & Ang, 2014; Ucheagwu, Akintoye & Adegbie, 2019.
<u>Moderator</u> Female Board Membership (FBM)	Presence of woman on the board of a firm	Binary variable that takes on the value 1 if at least one women is represented among the board of directors and 0 otherwise.	Tillenius, J & Lango, M, 2018; Kruders, 2018; Jeroh, 2018; Yahaya & Apochi, 2021.
<u>Control</u> Firm Size (FSIZ)	It is based on initial non-current assets investment in production or production capacity	Measured as natural logarithms of firm's total assets.	Babalola 2012 and Usman & Amran, 2015.

Source: Researcher's Field Work, (2022).

4. Results and discussion

This section is concerned with the presentation, analysis, and interpretation of the data collected during the course of this study. Table 2 showed the descriptive statistics of the return on assets (ROA), local community disclosure (LCD), quality assurance disclosure (QAD), environmental disclosure (ED), female board membership (FBM) and firm size (FSIZ) with

451 observations. Table 2 indicated a mean of return on asset (ROA) of 4.823 with a standard deviation of 2.005, and minimum and maximum values of 1.25 and 9.8 respectively. It also revealed that the measure of local community disclosure (LCD) of non-financial firms in Nigeria has a mean value of 0.612 with a standard deviation of 0.488, and minimum and maximum values of 0 and 1 respectively.

		Variable	Obs	Mean	Std. Dev.	Min	Max
Table 2. Descriptive Statistics		ROA	451	4.823	2.005	1.25	9.8
		LCD	451	.612	.488	0	1
		QAD	451	.313	.464	0	1
		ED	451	.231	.422	0	1
Source: STATA 13 output 2022		FBM	451	1.153	1.213	0	5
		FSIZ	451	7.122	.927	5.24	9.33

Furthermore, the mean value of quality assurance disclosure (QAD) during the period of this study is 0.313, and it ranges between 0 and

1 with a standard deviation of 0.464. The average score of ED is 0.093, and a standard deviation of 0.422, with a minimum and

maximum score of 0 and 1 respectively. The mean score of FBS is 1.153, while the minimum and the maximum value is 0 and 5 respectively. This implies that the deviation from the mean is 1.213. Finally, firm size (FSIZ) has a mean and

standard deviation 7.122 and standard deviation of 0.927, and it ranges between the value 5.24 and 9.33. This correlation matrix viewed how all variables (dependent, independent, moderating) are inter-related as presented in Table 3.

Table 3: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) ROA	1.000								
(2) LCD	-0.007 (0.880)	1.000							
(3) QAD	0.058 (0.221)	0.184* (0.000)	1.000						
(4) ED	0.095* (0.043)	0.209* (0.000)	0.312* (0.000)	1.000					
(5) FBM	-0.003 (0.956)	0.228* (0.000)	0.290* (0.000)	0.417* (0.000)	1.000				
(6) FBM*LCD	0.014 (0.766)	0.556* (0.000)	0.253* (0.000)	0.379* (0.000)	0.812* (0.000)	1.000			
(7) FBM*QAD	-0.008 (0.867)	0.179* (0.000)	0.813* (0.000)	0.362* (0.000)	0.502* (0.000)	0.413* (0.000)	1.000		
(8) FBM*ED	0.019 (0.688)	0.175* (0.000)	0.231* (0.000)	0.807* (0.000)	0.649* (0.000)	0.551* (0.000)	0.413* (0.000)	1.000	
(9) FSIZ	-0.056 (0.232)	0.312* (0.000)	0.230* (0.000)	0.483* (0.000)	0.439* (0.000)	0.448* (0.000)	0.214* (0.000)	0.441* (0.000)	1.000

* shows significance at $p < .05$

Source: STATA Output Result, (2022).

Table 3 reported that LCD, QAD, ED, FBM and FBM□LCD, FBM□QAD and FBM□ED of the non-financial services firms in Nigeria are positively associated to ROA with the coefficient values of -0.007, 0.058, 0.095, and -0.003 with p-value of 0.880, 0.221, 0.043 and 0.956 respectively. Not all the variables are significant at any level of significance, except ED that is significant at 5% level of significance. On the other hand, FBM□LCD, FBM□QAD and FBM□ED do not show significant at any level of significance. The results showed that LCD has statistically and perfect negative relationship with ROA, meaning as LCD increases, ROA decreases, while QAD and ED both have positive relationship. It therefore

means that as QAD and ED increase respectively, ROA will also increase. Similarly, FBM and FSIZ have perfect negative relationship with other variables. The results from the correlation matrix indicated the presence of multicollinearity issues on FBM*LCD and FBM*ED as such the test for variance inflation factor was carried out.

This section discusses the results of model I and model II presented in Table 4 and 5 respectively. From the Table 4, it is observed that local community disclosure (LCD) has an insignificant negative impact on return on assets (ROA) of listed non – financial services firms in Nigeria. The t-value of -0.37 and the p-value of

0.71 with the coefficient value of -0.1 suggests negative impact. This means that the managers are not inclining to manage local community activities when profitability is low. Thus, this study fails to reject the null hypothesis 1 (H_{01}). This finding is in line with study of Oti et al

(2018), and Suchanek et al. (2014) that found an insignificant relationship between local community disclosure and return on assets. However, it contradicts the finding of Ejeje et al. (2021) who found that LCD has a significant positive relationship with ROA.

Table 4. Regression Results of Model I

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
LCD	-.1	.268	-0.37	.71	-.627	.428	
QAD	1.017	.422	2.41	.017	.187	1.847	**
ED	.794	.399	1.99	.047	.011	1.578	**
FBM	-.391	.128	-3.06	.002	-.642	-.14	***
FSIZ	-.12	.558	-0.21	.83	-1.217	.977	
Constant	5.688	3.892	1.46	.145	-1.963	13.339	
Mean dependent var	4.823		SD dependent var	2.005			
R-squared	0.041		Number of obs	451			
F-test	3.439		Prob > F	0.000			
Akaike crit. (AIC)	1825.210		Bayesian crit. (BIC)	1849.878			

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

Source: STATA 13 Output Result, (2022).

More so, the regression results revealed that quality assurance disclosure (QAD) as shown in Table 4 has a t-value of 0.017 and a coefficient value of 1.017, which is significant at 5% level of significance. This indicates that QAD has a significant positive effect on return on assets of non-financial services companies in Nigeria. This implies that for every increase in the percentage of QAD there is a significant increase in ROA. The positive influence of QAD on the ROA is not surprising as good quality products usually attract customers, invariably increases sales and eventually increases profitability of companies. The study fails to reject the null hypothesis 2 (H_{02}) of the study. This finding is consistent with the study of James et al. (2014).

Furthermore, Table 4 also provided evidence that there is a positive significant relationship between environmental disclosure (ED) and return on assets of non-financial

services firms in Nigeria. This is deduced from the coefficient value of 0.794, t-value of 1.99 and p-value of 0.047 which is statistically significant at 5% level of significance. This implies that all things being equal, a unit increase in ED will result to an increase in ROA. The result is not surprising because people/customers naturally are attracted to firms that is engaged in environmental development activities. Thus, this result rejects the null hypothesis (H_{03}) of this study, the results agree with the finding of Oshiole et al. (2020), and Gamhewage et al. (2018), but contradicts findings of Gunathilaka et al (2018).

Random Effect Panel

Table 5 is a Random Effect Panel, which consist of regression results of model II. This was arrived at when a Hausman specification test, fixed effect (fe) and random effect (re) panels

were carried out, it produced an insignificant value of $\chi^2=0.1347$. This study further employed Breusch and Pagan Lagrangian Multiplier (BPLMT) test to choose between

Ordinary Least Square (OLS) and RE. The BPLMT produced a significant value of $\chi^2 = 0.0050$, and hence the random effect model.

Table 5: Regression results for Model II

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
LCD	-.253	.289	-0.88	.381	-.82	.313	
QAD	.952	.402	2.37	.018	.164	1.739	**
ED	1.392	.46	3.02	.003	.489	2.294	***
FBM	-.006	.183	-0.04	.972	-.365	.352	
FBM□LCD	.175	.183	0.95	.34	-.184	.533	
FBM□QAD	-.451	.21	-2.15	.032	-.862	-.039	**
FBM□ED	-.328	.201	-1.63	.102	-.722	.065	
FSIZ	-.326	.156	-2.09	.036	-.631	-.021	**
Constant	6.935	1.047	6.62	0	4.883	8.987	***
Mean dependent var	4.823		SD dependent var	2.005			
Overall r-squared	0.046		Number of obs	451			
Chi-square	20.671		Prob > χ^2	0.008			
R-squared within	0.044		R-squared between	0.077			

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

STATA 13 Output Result, (2022).

Table 5 is the regression results for model II that showed the interaction of the moderating variable, firm size (FSIZ). This table further revealed clearly that the direct relationship results of local community disclosure as moderated by female board size (FBM□LCD) with a coefficient value of 0.175, t-value of 0.95 with a corresponding insignificant p-value of 0.34. This connotes that the direct relationship of LCD as moderated by FBM has a positive insignificant impact on ROA of non-financial services firms in Nigeria at no level of significance. This implies that for every 1% increase in FBM□LCD, there will be a corresponding increase of 17.5% on ROA, though the relationship is not statistically significant. As observed from Table 5 above, the result of LCD without moderation had a negative statistically insignificant impact on ROA, whereas, there exist a positive and insignificant

impact relationship between FBM□LCD and ROA of the sampled firms. This, therefore, implies that FBS changed the direction of the relationship between LCD and ROA. The result validates and confirms hypothesis 2 (H_{02}) that LCD has no significant moderating effect on the relationship between the FBM and ROA of listed non-financial services firms in Nigeria.

Similarly, from Table 5, it is observed that the combined and moderated result of female board size and quality assurance disclosure (FBM□QAD) has a coefficient value of -0.451, t-value value of -2.15 and a p-value of 0.032. This connotes that the indirect relationship of QAD as moderated by FBM has a negative significant impact on ROA at 5% level of significance. This implies that for every increase FBM-QAD, there is a corresponding decrease of -0.451% on the ROA of listed non-financial services firms in Nigeria. This result did not

conform to the apriori expectation of the researcher. As observed from table 5 above, the result of QAD without moderation had a positive and significant impact on ROA whereas there exist negative and significant impacting relationship between FBS-QAD and the ROA of the sampled firms. This, therefore, implies that female board size changed the direction of the relationship between QAD and ROA. This finding gives us the bias to reject the null hypothesis (H_{02}) of the study which suggests that, the FBM has no moderating effect on the relationship between the FBM and ROA of listed non-financial services firms in Nigeria.

Also, from the Table 5, this study reveals that the combined and moderated result of environmental disclosure and return on assets (FBM-ED) has a coefficient value of -0.328, t-value of -1.63, and p-value of 0.102. This shows that the indirect relationship on ED as moderated by FBM has a negative insignificant impact on ROA of listed firms at no level of significance. This implies that all things being equal, for every 1% increase in FBM-ED, there will be a corresponding decrease of -0.328% on ROA of listed non-financial services firms in Nigeria. As observed from table 5 above, the result of ED without moderation had a positive significant impact on ROA, whereas, there exist a negative and insignificant impacting relationship between environmental and return on assets moderated female board size of the sampled firms. This therefore, implies that FBM changed the direction of the relationship between ED and ROA. The result validates and confirms hypothesis 6 (H_{06}) that female board size has no significant moderating effect on the relationship between ED and ROA of the sampled firms.

From the regression results of model I and II in Table 4 and 5 respectively, the coefficient of determination (R^2) shows the value of 0.041 (4.1%) and 0.046 (4.6%) respectively. This indicate that explanatory variables (LCD, QAD and ED) explained 4.1% of dependent variable (ROA) in model I while in model II explanatory

variables (LCD, QAD and ED) explained 4.6% of dependent variable (ROA). According to Moksony (1999), in his article titled ‘small is beautiful: the use and interpretation of R^2 in social research’, states that the popular view of high coefficient of determination that measures the explanatory power of the variables included in a regression model is rather misleading. The high respect researchers commonly have for the coefficient of determination does not seem to be warranted; the popularity of R^2 derives, it appears, much more from its rhetorical value than from its actual accomplishments. No matter how low is the value of coefficient of determination, it also serves good purpose similar to high coefficient of determination.

5. Conclusion and recommendations

This study examined the moderating effect of female board membership (FBM) on the relationship between corporate social responsibilities and the profitability of listed non-financial services firms in Nigeria from 2011 to 2021. The findings indicated that FBM could moderate the relationship between quality assurance disclosure (QAD) and profitability, showing that female board members influence the connection due to their focus on developing quality products. However, FBM was unable to moderate the relationship between local community disclosure (LCD), environmental disclosure (ED), and profitability, suggesting that female board members do not impact these relationships in Nigerian non-financial services firms. Based on these conclusions, this study recommended that female board members closely monitor production processes to ensure efficiency and control production costs.

References

- Ahinfu, G. (2018). The relationship between environmental management practices and profitability of Ghanaian SMSs. *Doctoral thesis, Bournemouth University*.

- Albahussain, S. A. (2015). A suggested conceptual agenda for market orientation and corporate social responsibility towards the business performance of Saudi Industrial Organisations. *International Business and Management*, 11(2), 16-30.
- Ali, A. S., & Stanley, K. (2016). Effect of liquidity management on profitability of commercial banks in Mogadishu. Somalia. *International Journal for Research in Business, Management and Accounting*, 2(5), 101-123.
- Amacha, E.B., & Dastane, O. (2017). Sustainability practices as determinants of profitability: A case of Malaysian corporations. *Journal of Asian Finance, Economics and Business*, 4(2), 55-68.
- Bahurmoz, A. M. (2020). Measuring corporate social responsibility performance: a comprehensive AHP based index. Evidence from Saudi Arabia. *Chapter Metric Review*. DOI: 10.5772/intechopen.94463.
- Bartolacci, F., Paolini, A., Soverchia, M., & Zigiotti, E. (2016). Waste management and profitability: evidence from Italian companies. Management international conference, 161-171.
- Bassey, E. B., Oba, U. E. U., & Onyah, G. E., (2013). An analysis of the extent of implementation of environmental cost management and its impact on output of oil and gas companies in Nigeria, (2001-2010) *European Journal of Business and Management*, 5(1), 2222-2839.
- Beredugo, S. B., & Mefor, I. P., (2012). The impact of environmental accounting and reporting on sustainable development in Nigeria. *Research Journal of Finance and Accounting*, 3(7), 2222-2847.
- Burriit L., Hahn T., & Schaltegger, S. (2001). Current practice in EMA-towards a comprehensive framework for EMA.
- CBN, (2019). International Financial Corporation; World Bank Group.
- Daniel, A. O. C., Emeka, N.N.A., & Orjinta, H.I. (2021). Environmental disclosure and profitability: evidence from oil and gas firms listed in Nigeria. *International Journal of Business and Management*. 9(13), 03-037.
- Deegan, C. (2002). Introduction: the legitimizing effect of social and environmental disclosures-a theoretical foundation. *Accounting, Auditing & Accountability Journal*, 3(15), 282-311.
- Ezeagba, C. E., John-Akamelu, C. R., & Umeoduagu, C. (2017). Environmental accounting disclosures and profitability: A study of selected food and beverage companies in Nigeria (2006-2015). *International Journal of Academic Research in Business and Social Sciences*, 7(9), 162-174.
- Ezejiofor, R.A., Racheal, J.A., & Chigbo, C.E. (2016). Effect of sustainability environmental cost accounting on profitability of Nigerian corporate organizations. *International Journal of scientific research and management*, 4(8), 4536-4549.
- Gregory-Smith, D., Manika, D., & Demirel, P., (2017). Green intentions under the blue flag: Exploring differences in EU consumers' willingness to pay more for environmentally-friendly products. *Business ethics*, 26 (3), 205–222.
- Gunathilaka, L. F. D. Z., & Gunawardana, K. D. (2018). An analysis of environmental management practices on profitability of rubber industry in Sri Lanka. International conferences on business and management.
- Gujarati, D. N., Porter, D. C., & Gunasekar, S. (2012). Basic econometrics, Tata McGraw Hill, New Delhi 5th edition.
- Kasum, A. S., & Osemene, O. F. (2010). Sustainable development and profitability of Nigerian quoted companies. Department of accounting and finance, university of Ilorin, Ilorin, Nigeria. abubakarsk@yahoo.com,

- abusk@unilorin.edu.ng and
bunmiosemene1@yahoo.com.
- Lanis, R., & Richardson, G. (2012). Corporate social responsibility and tax aggressiveness: a test of legitimacy theory. *Accounting, Auditing & Accountability Journal*, 1(26), 75-100.
- Magara, R., Aming'a, N. N., & Momanyi, E., (2015). Effect of environmental accounting on company profitability in Kisii County. *British Journal of Economics, Management & Trade*.
- Mitnick, B. M. (2013). Origin of the theory of agency: an account by one of the theory's originator. *Electronic Journal*. DOI:10.2139/ssrn.1020378.
- Moksony, F. (1999). Small is beautiful: the use and interpretation of R² in social research. *Szociologiai Szemle*. Special issue. 130-138.
- Molla, M. S. (2021). Effect of Gender Diversity on the Association between Corporate Sustainability Practices and Profitability of Firms: Evidence from Malaysia. *Finance & Economics Review* 3(2), 15-31.
- Molla, M. S., Ibrahim, Y., & Ishak, Z. (2019). Corporate sustainability practices: A review on the measurements, relevant problems, and a proposition. *Global Journal of Management and Business Research*, 19(1), 1-8.
- Muhammad, I., Khalid, L., Arslan, N. K., & Rafia, N. (2017). Corporate social responsibility and firm performance: the moderating effect of ownership concentration. Advances in managing operations and sustainability, *Journal of Managerial Sciences*. 11(3), 353-386.
- Neeveditah, P. M., Karishma, A., & Devi, N. (2017). Environmental management systems and profitability: The case of listed companies in Mauritius. *Scientific research publishing*. Theoretical Economics Letters, 7, 2054-2069.
- Nobanee, H., & Ellili, N., (2017). Degree of corporate social responsibility disclosure and its impact on banking performance.
- Nnamani, J.N., Onyekwelu, U.L., & Ugwu, O.K. (2017). Effect of sustainability accounting and reporting on profitability of firms in Nigeria brewery sector. *European Journal of Business and Innovation Research*, 5(1), 1-15.
- Nwaimo, S. C. (2020). Effect of environmental cost on performances of quoted firms in sub-saharan Africa. *European Journal of Accounting, Auditing and Finance Research*, 8(7), 97-120.
- Office for National Statistics, 2015. UK environmental goods and services sector (EGSS): 2010-2012. [online].
- Okafor, A., Ngozi, B. A., & Adusie, M. (2021). Corporate social responsibility and financial performance: Evidence from U.S. tech firms. *Journal of Cleaner Production (JCP)*, 292(10), 078 – 126.
- Okegbe, T. O., Paulinus, E. C., & Onyebuchi, O. H. (2019). Environmental management reporting and corporate performance: evidence from natural resources, agriculture, oil and gas firms in Nigeria. *International Journal of Trend in Scientific Research and Development*, 3(5), 2456-6470.
- Okoye, P.V.C., & Ezejiofor, R.A. (2013). An appraisal of sustainability environmental accounting in enhancing corporate productivity and economic performance. *International Journal of Advanced Research*, 1(8), 685-693.
- Onwuamaeze, D. (2021). Nigeria: women hold less than 25% corporate positions in Nigeria. *ThisDay* (Lagos), 19th August.
- Ong, T. S., & Ang, Y. W. (2014). The impact of environmental improvements on the profitability of leading companies listed in Bursa Malaysia. *International Journal of Trade, Economics and Finance*, 5(5), 386-391.

- Oshiole, S., Aruna, F. E., & Amahalu, N. N. (2020). Effect of environmental cost disclosure on profitability of listed oil and gas firms in Nigeria. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 10 (2), 157-170.
- Poundel, R. P. S. (2012). The impact of credit risk management on profitability of commercial banks in Nepal. *International of Arts and comer*, 1(5), 9-15.
- Rajput, N., Batra, G., & Pathak, R. (2012). Linking CSR and profitability: An empirical validation. *Problems and Perspectives in Management*, 10(2), 42-49.
- Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *The Academy of Management Journal*, 40(3), 534-559
- Sahil, C., & Iqbal, M. (2005). Environmental disclosure: A Bangladesh perspective”. *The Cost and Management of Journal*, 33(4), 26-228.
- Sekhon, A. K., & Kathuria, L. M. (2020). Analyzing the impact of corporate social responsibility on corporate financial performance: evidence from top Indian firms. *The International Journal of Business in Society*, 20(1), 143-157.
- Samy. M., Odemilin, G., & Bampton, R. (2010). Corporate social responsibility: a strategy for sustainable business success. An analysis of 120 selected British companies. *International Journal of Business in Society*, 10(2).
- Scholten, B (2009).Corporate social responsibility in the international banking industry. *Journal of Business Ethics* 86; 159-175 DOI10.1007/s10551-008-9841-x
- Sayedeh, P. S., & Saudah, S. (2014). A proposed model of the relationship between environmental management accounting and firm performance. *International Journal of Information Processing and Management*, 5(3).
- Uwaoma, I., & Ordu, P.A. (2016). Environmental reporting in the oil and gas industry in Nigeria. *International Journal of Research in Business Studies and Management*, 3(11), 1-21.
- Uwuigbe, U., & Jimoh, J. (2012). Corporate environmental disclosures in the Nigerian manufacturing industry: A Study of Selected Firms. *An International Multidisciplinary Journal, Ethiopia*, 6(3), 71-83.
- United Nations Division for Sustainable Development, UNDSO (2003): Improving government's role in the promotion of environmental managerial accounting, United Nations.
- United Nations Division for Sustainable Development, UNDSO: (2003). Environmental management accounting, procedures and principles, United Nations.