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BOARD DIVERSITY, MANAGERIAL OWNERSHIP AND QUALITY OF ENVIRONMENTAL ACCOUNTING INFORMATION DISCLOSURE BY LISTED INDUSTRIAL GOODS COMPANIES IN NIGERIA

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ABSTRACT

This study examined the impact of Board Gender Diversity, Foreign Directorship and Managerial Ownership on the quality of environmental accounting information disclosure by listed industrial goods companies in Nigeria. The study used a sample of eight (8) industrial goods companies listed on the Nigerian Exchange Group for a period of sixteen years (2006-2021) which were selected using a two-point filter of being listed on the Nigerian Exchange Group on/or before 31/12/2006 and not

Introduction

The environment is a very important part of human existence as it supports life. However, human activities have caused serious problems to the environment. The negative impact of human and industrial activities on the environment is that it causes environmental degradation which threatens all aspects of human well-being (Salako, Sholeye & Ayankoya, 2012). Industries are very important in any economy but they do not disclose the effects of their operations on the environment through their corporate annual reports. Due to the fact that the conventional traditional accounting practice does not give proper recognition to accounting for materials, water, energy and other natural resource usage (Sani, 2018), there is the need for environmental accounting. According to Ali, Rasheed and Islam (2010) environmental accounting is the identification, measurement and allocation of environmental costs, the integration of these environmental costs into business decisions and the subsequent communication of the information to a company's stakeholders. Board attributes, could be important determinants of environmental disclosure, since firms' disclosure

been delisted within the period 2006-2021. Content analysis technique was used to elicit data from the annual reports and accounts of the companies, through the use of an environmental disclosure index adapted from the Global Reporting Initiative. Regression analysis was used to analyze the data collected. Skewness and Kurtosis, Hausman, Heteroskedasticity and Multicolinearity tests were conducted. Descriptive statistics were also used. The study revealed that listed industrial goods companies made low quality disclosures during the period. The results found that Board Gender Diversity has a negative and significant impact, Foreign Directorship has a negative and insignificant impact and Managerial Ownership has a negative and insignificant impact on the quality of environmental accounting information disclosed by listed industrial goods companies in Nigeria. This study is restricted to only assessing the impact of Board Gender Diversity, Foreign Directorship and Managerial Ownership on the quality of environmental accounting information disclosure in listed industrial goods companies in Nigeria. It does not measure the impact of such attributes on environmental disclosure quantity. The directive by the Federal Government to companies to comply with all environmental standards would lead to high quality environmental information disclosure. Proper Board Gender Diversity, Foreign Directorship and Managerial Ownership would lead to a higher quality of environmental accounting information disclosure thereby benefitting the whole society. This is the first study that provides empirical evidence on the impact of Board Gender Diversity, Foreign Directorship and Managerial Ownership on the quality of environmental accounting information disclosure by listed industrial goods companies in Nigeria to the best of the authors' knowledge.

Keywords -Board Gender, Foreign Directorship, Managerial Ownership, Diversity, Disclosure, Quality

policies are basically determined by the board of directors (Akbas, 2016). As such, it is expected that companies exhibiting effective board attributes will exhibit better environmental performance and make better environmental disclosure (Mgbame & Onoyase, 2015). However, there is a scarcity of research investigating the impact of board attributes on the disclosure of corporate environmental accounting information (Akbas, 2016; Darus & Janggu, 2016)

Most of the studies on corporate environmental disclosure have been conducted on companies in developed countries (Aras & Crowther, 2007, Brammer & Pavelin, 2008, Aburaya, 2012, Beji, Yousfi, Loukil & Omri (2020). However, limited studies have been undertaken in the developing countries such as Egypt, Tunisia, Malaysia, Indonesia amongst others (Eljayash, Kavanagh & Kong, 2013, Yusoff, Othman & Yatim, 2013) including Nigeria (John, 2011, Uwuigbe, 2011b, Oba & Fodio, 2012a, Dibia & Onwuchekwa, 2015, Oscar & Ofure, 2015, Haladu & Salim, 2016) amongst others. Similarly, a majority of previous studies conducted even in developed countries on environmental disclosure concentrated only on the quantity of disclosure but scant attention has been given to the quality of such disclosure (Hassan, 2011, Aburaya, 2012, Rupley, Brown & Marshall, 2012, Haji, 2013, Michelon & Parbonetti, 2010). In the Nigerian context, many indexes have been used to measure the quality of accounting disclosure, but the GRI guidelines have not been tested. This study therefore is set out to examine the impact of Board Gender Diversity, Foreign Directorship and Managerial Ownership on the quality of environmental accounting information disclosures by listed industrial goods companies in Nigeria.

This study has been organized into five parts. The first part is the introduction, problem statement and the objectives of the study. The second section reviews relevant literature on the subject matter and develops the hypotheses on each of the study variables. In the methodology, the study highlighted the study variables and their measurement. In part four an analysis of data is carried out, the results interpreted, the hypotheses are tested and the implications stated. Part five contains conclusions and recommendations based on the findings drawn from the research.

Literature Review and Hypotheses Development

Environmental disclosure started as sporadic disclosure in company newsletters and press releases and developed in the 1970s to become more often incorporated in annual reports for United States and European companies. Corporate environmental disclosure is the process through which companies often disclose environmental information to their stakeholders to provide evidence that they are accountable for their activities and the resultant impact on the environment (Alok, Nikhil, & Bhagaban, 2008; Mgammal, 2017). Disclosure of environmental accounting information as one of the key elements in an environmental report enables those parties utilizing this information to get an understanding of the companies' stance on environmental conservation and how it specifically deals with environmental issues. As such, it is expected that companies exhibiting effective board attributes will exhibit better environmental performance and this will lead companies to make better environmental disclosure (Mgbame & Onoyase, 2015). The concern by the Federal Government to protect the environment gave rise to the creation of the Federal Ministry of Environment in 1999 to ensure effective coordination of all environmental matters. The National Oil Spill Detection and Response Agency (NOSDRA) was established in 2006 as a response to heightened agitation to remedy and stop the environmental degradation caused by oil spillages by multi-national oil companies operating in oil producing areas of the country. The National Environmental Standards and Regulations Enforcement Agency (NESREA) Act, 2007 led to the formation of NESREA, charged with the responsibility of the protection and development of the Nation's environment, bio-diversity, conservation and sustainable development. However, in spite of the efforts of the government there is still much to be desired from companies in terms of improving the quality of environmental accounting information disclosure.

Board Gender Diversity and the Quality of Environmental Accounting Information Disclosure.

Board gender diversity refers to the ratio of female directors to the total number of directors on the board of a company (Oba & Fodio, 2012b; Okon & Afza, 2014). The gender diversity of the board has been considered an important attribute that can influence the extent of environmental disclosure (Liao, Tian & Tang, 2015). Women may make contributions on corporate boards by creating alliances, preparation and involvement, taking part in important decisions, taking leadership roles, improving company image with stakeholder groups, ensuring better boardroom behavior and contributing in better corporate communication (Barako & Brown, 2008; Akbas, 2016). According to the stakeholder theory, a more diverse board is a better monitor of managers because there is a relationship between the proportion of women directors on the board and corporate environmental disclosure. The gender diversity of the board has been considered an important attribute that can influence the extent of environmental disclosure. Boards with gender diversity, will help firms adopt a stakeholder orientation and will be able to provide the firms with essential knowledge for superior stakeholder management.

The results of empirical studies indicated divergent findings on the impact of board gender diversity on the quality of environmental accounting information disclosure: Barako and Brown (2006) examined the influence of gender representation on the board on communication of corporate social reporting of forty Kenyan banks. The results indicated that a higher level of women representation greatly improved disclosure. Post, Rahman & Rubow (2011) examined the effect of female board members and environmental concerns of 1000 firms. The findings revealed that three or more female board members provide a higher environmental strength and less negative incidents. Kathyayini and Carol (2012) examined the influence of women on boards of directors on environmental disclosure by Malaysian companies in 2011. The results indicated that the proportion of women in the board of directors have a positive relationship with environmental disclosure by companies. Rao, Tilt and Lester (2012) examined the impact of gender diversity for the largest 100 Australian firms. The findings revealed a positive relationship between environmental reporting and board gender diversity for the firms. However, Oba and Fodio (2012b) examined the relationship between gender diversity and the quality of environmental accounting disclosures in Nigeria obtained from twenty-one annual reports of environmentally sensitive firms listed on the NSE for the period 2004-2009 using content analysis. The findings revealed that gender mix have no significant relationship with environmental disclosures. Handajani, Subroto, Sutrisno and Saraswati (2014) examined the effect of board gender on corporate social and environmental disclosure from firms listed on the Indonesian Stock Exchange for the period 2010-2012. The results indicated that board gender has significant negative effect on corporate social and environmental disclosure. Setyawan and Kamilla (2015) investigated the impact of gender proportion on corporate environmental disclosure in Indonesia using GRI's checklist and content analysis to elicit data from the annual reports of Indonesia mining companies in the

year 2011-2013. The results indicated no relationship between gender proportion and environmental disclosure. Trireksani and Djajadikerta (2016) assessed the relationships between proportion of female directors on the board and the extent of environmental disclosures using content analysis on the annual reports and accounts of 21 listed Indonesian mining companies. The results indicated that the proportion of female directors on the board has no relationship with the extent of corporate environmental disclosure. Others include Samaha, Khlif and Hussainey (2013); Kaspereit, Lopatta and Matol (2016); Akbas (2016); Terri and Hadrian (2016); Rafique, Malik, Waheed and Khan (2017); Zainal (2017); Onuorah, Egbunike and Gunardi (2018).
This study formulates the following hypothesis:

H_{01}: Board gender diversity has no significant impact on the quality of environmental accounting information disclosure by listed industrial goods companies in Nigeria.

Foreign Directorship and the Quality of Environmental Accounting Information Disclosure

Foreign Directorship refers to the ratio of foreign directors to the total number of directors on the board of a company (Elsakit & Worthington, 2014; Ayoib & Osazuwa, 2015). Many companies in Nigeria are partially owned by foreigners, even those fully owned by Nigerians normally employ foreigners as members of their boards. The reason being that they bring their expertise and exposure to bear on the board's decisions including environmental disclosure. In this context, foreign nationals are assumed to be those who are from developed countries, where environmental issues receive a considerable amount of attention from information users and society at large. Therefore, environmental disclosure can be affected by the existence of foreign nationals on board of directors. It is assumed that such interest and knowledge, will be transferred to boards of domestic firms in developing countries, by the foreigners either as executive or non-executive directors (Oba & Fodio, 2012b; Elsakit & Worthington, 2014). From a stakeholder theory perspective foreign directors on board especially from developed countries, where environmental issues receive a considerable amount of attention transfer the interests and knowledge to boards of domestic firms in developing countries.

The results of empirical studies indicated divergent findings on the impact of foreign directorship on the quality of environmental accounting information disclosure: Barako and Brown (2006) examined the influence of foreign nationals on board on communication of corporate social reporting by forty Kenyan banks. The results of the multiple regression analysis indicated foreign directors greatly improve disclosure. Khan (2010) examined the relationship between the degree of corporate social disclosure, with the proportion of foreign nationals on boards of Bangladeshi banks. The results indicated that the level of voluntary social disclosure is significantly correlated with the proportion of foreign nationals on the board. Oba and Fodio (2012b) examined the relationship between board characteristics including foreign directors and the quality of environmental accounting disclosure in Nigeria from twenty-one annual reports of environmentally sensitive firms listed on the NSE for the

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period 2004-2009 using content analysis. Findings revealed that foreign directors have significant relationship with environmental disclosures. Ayoib and Osazuwa (2015) investigated the effect of director's culture on the level of environmental disclosures among quoted companies in Malaysia using content analysis. Findings indicated a significant relationship between environmental disclosure and boards dominated by foreign directors. Anazonwu, Egbunike and Gunardi (2017) set out to ascertain the influence of corporate board diversity on sustainability reporting on a sample of quoted conglomerates, consumer goods and industrial goods firms in Nigeria. The results show no significant positive influence of board member nationality. Eriabie & Odia (2018) examined the impact of foreign directors on corporate social environmental disclosure of 17 listed industrial and consumer goods firms for the period 2012–2016 in Nigeria. The findings from the study revealed that foreign directors had a significant positive influence on the extent of corporate social environmental disclosure of the selected firms.

This study formulates the following hypothesis:

H_{02}: Foreign directorship has no significant impact on the quality of environmental accounting information disclosure by listed industrial goods companies in Nigeria.

Managerial Ownership and the Quality of Environmental Accounting Information Disclosure

Managerial ownership is the ratio of shares owned by the members of the board of directors to the total issued shares (Khan, 2010). The ownership structure of an organization determines the level of monitoring and thus affects the nature and extent of voluntary disclosure. Problems exist when managerial ownership is low simply because the executives have higher incentives to consume the bonuses and less incentive to maximize job performance (Aras & Crowther, 2008; Khan, 2010). In order to align the interests between the owners and managers, benefits of the firms for themselves and conceal some fraudulent transactions and incompetence, a possible solution is to provide the managers with partial ownership in the form of shares. According to the stakeholder theory perspective, managers, who are the shareholders of the entities, are motivated to increase the entities values, as well as to increase shareholders' wealth, as it will also increase their own wealth. Accordingly, environmental information disclosure will increase, because it is expected that since managers have the same interests as the owners, they will disclose more information (Juhmani, 2013). In addition, to mitigate the severity of conflicts associated with ownership dispersion, managers may be willing to voluntarily disclose more information, as owners rely upon such disclosure for information concerning the firm's activities (Brammer & Pavelin, 2008; Juhmani, 2014). However, opponents of this view posit that if the directors hold shares, they might not want to disclose all the material information to the outsiders since they would like to channel the benefits of the firms for themselves and conceal some fraudulent transactions and incompetence (Khan, 2010).

Empirically. Htay, Rashid, Adnan & Meera (2012) investigated the impact of managerial ownership on social and environmental information disclosure of Malaysian listed companies.

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The findings indicated that companies with higher percentage of director ownership have higher information disclosure. Chakroun and Hussainey (2013) examined the determinants of disclosure quality and quantity on companies listed on the Tunisian Stock Exchange for the year 2007 and 2008.The findings revealed that managerial ownership had a positive effect on disclosure quality. Mgbame and Onoyase (2015) examined the effect of managerial ownership on environmental disclosure of 14 randomly selected oil and gas companies in Nigeria for the period 2010-2013. The findings revealed that managerial ownership had a positive and significant relationship with environmental disclosures. Bunjamin, Alrazi, Johari and Rahman (2019) analyzed whether the composition and quality of board of directors influence managers to disclose more environmental information in Malaysia. Findings indicated that managerial ownership was significant in influencing the extent of environmental reporting. Others include Zulkiflee (2010); Juhmani (2013); Damagun and Chima (2013); Soliman, Rageb and Eldin (2014); Elsayih (2015); Eriabie and Odia (2016); Alarussi and Aldhamari (2017);Sadiq and Mohammed (2017); Mgammal (2017);Rabiu and Ibrahim (2017); Yusuf, Fodio and Nwala (2018)

This study formulates the following hypothesis:

H_{03}: Managerial ownership has no significant impact on the quality of environmental accounting information disclosure by listed industrial goods companies in Nigeria.

Methodology

Sample Selection Procedure

The population of this study comprises of seventeen (17) companies listed under the industrial goods sector of the Nigerian Exchange Group as at 31st December, 2021. The study's working population, which also constituted the sample size, was derived using a two-point filtering process. The criteria applied entailed ensuring that the company had been listed on the Nigerian Stock Exchange on or before the 31st of December, 2006, and had not been delisted between 2006 and 2021. Consequently, eight (8) companies were considered qualified and were subsequently selected as the study sample. This study used secondary sources of data extracted from the corporate annual reports and accounts and corporate websites of these companies for a period of sixteen years. This study used the content analysis method to extract data from the annual reports and accounts of the industrial goods companies using an environmental disclosure checklist derived from GRI standard. This is in line with the work of Barde & Hamidu (2015) and Jibril, Isa & Maigoshi, 2022.

Measurement of the Variables

Table 1 presents the variables of the study and their measurements. The variables are categorized into dependent (Environmental Disclosure Score), Independent Variables (Board Gender Diversity, Foreign Directorship and Managerial Ownership) and control variables (Firm Size, Profitability and Financial Leverage). This study applied a weighted disclosure index with values ranging between 0-4 by assigning weights to disclosures of environmental matters. A combination of qualitative and quantitative information (4), quantitative information (3), qualitative information (2), general information (1) and companies that do not disclose environmental information for a given indicator receive a score of zero (0) for that item. This is adapted from Yusoff, *et al.* (2013) and Ahmed (2017). The checklist which is adapted from GRI has twenty-nine items grouped under nine (9) themes. In addition, after getting the disclosure score for each year and company, an average score is computed and compared with a scale as follows: 0-20 (Minimum Quality), 21-40 (Low Quality), 41-60 (Medium Quality), 61-80 (Significant Quality), 81-116 (Extensive Quality). This was adapted from Nigerian States Budget Transparency Survey Report (2018) and Oba & Fodio (2012b).

Table 1: ***Summary of Variables and their Measurement***

Variables	Acronym	Measurement	Source
Dependent Variable			
Environmental Disclosure Score	EDIS	Measured by using a GRI index and a weighted rating scale with scores ranging between 0-4.	Ahmed (2017); Yusoff, *et al*,(2013)
Independent Variables			
Board Gender Diversity	GEND	No. of female directors/ Total number of directors	Isa & Muhammad (2015);Khan (2010)
Foreign Directorship	FORD	No. of foreign directors/ Total number of directors	Elsakit & Worthington (2014);; Okon & Afza (2014)
Managerial Ownership	MOWN	No. of shares owned by the members of the board of directors/Total issued shares	Mgammal (2017); Ayoib & Osazuwa (2015)
Control Variables			
Firm Size	FSZE	The natural logarithm of total assets of the company at the end of each fiscal year	Joshi, Suwaidan &Kumar (2011); Juhmani (2014)
Profitability	PROF	The ratio of net profit before tax to total assets of the company at the end of each fiscal year	Asuquo (2012); Akbas (2014)
Financial Leverage	LEVG	Ratio of total debts/total assets of the company at the end of each fiscal year.	Uwuigbe (2011); Dibia & Onwuchekwa (2015)

Source: Literature Review

Model Specification

$EDIS_{it} = \beta_0 + + \beta_1 GEND_{it} + \beta_2 FORD_{it} + \beta_3 MOWN_{it} + \beta_4 FSZE_{it} + \beta_5 PROF_{it} + \beta_6 LEVG_{it} + \varepsilon i$

Where

$EDIS_{it}$: Environmental Disclosure Score

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$GEND_{it}$: Board gender diversity of company i in time t
$FORD_{it}$: Foreign directorship on board of company i in time t
$MOWN_{it}$: Managerial ownership of company i in time t
$FSZE_{it}$: Firm size of company i in time t
$PROF_{it}$: Profitability of company i in time t
$LEVG_{it}$: Financial leverage of company i in time t
β_0 = Intercept
β_1- $\beta 6$ = Coefficient of the independent variables
t = Time dimension of the variable

Results and Discussions

Table 2: ***Descriptive Statistics***

Variable	Obs	Mean	Std. Dv.	Min	Max
EDIS	128	29.461	15.155	9	75
GEND	128	0.131	0.143	0	0.429
FORD	128	0.196	0.210	0	0.7
MOWN	128	0.087	0.113	0.003	0.526
FSZE	128	6.558	0.909	5.201	8.762
PROF	128	0.149	0.474	-1.799	4.418
LEVG	128	0.419	0.179	0.027	0.956

Source: Authors' Computations

Table 2 indicates that the average score for corporate environmental accounting information disclosure (EDIS) by listed industrial goods companies in Nigeria over a sixteen-year period was 29.461. This indicates that the listed industrial goods companies made low quality disclosures over the period. The minimum and maximum scores during the period were 9 and 75 respectively. Additionally, Table 2 shows that for board gender diversity, the average is 0.131 (13.1%).This suggests that 13.1% of the board members are female. The maximum and minimum values are 0.429 (42.9%) and 0 respectively. These statistics revealed that while some boards have no female directors, the board with the highest number of female directors had 42.9%.

Furthermore, Table 2 shows that the mean for foreign directorship is 0.196 (19.6%) and its standard deviation is 0.210 (21%). This indicates that on average, 19.6% of the directors on the boards of the sampled firms are foreigners. The minimum value of 0 indicates that some boards had no foreign directors. The maximum value of 0.7 indicates that for some boards, 70% of the directors are foreigners. In addition, Table 2 shows that on average, 0.087 (8.7%) of the shares of the sampled firms are owned by managers of listed industrial goods companies. The maximum and minimum values are 0.526 (52.6%) and 0.003 (0.3%) respectively. This indicates that during the study period, the firm with high managerial ownership has 52.6% of its shares held by managers while the firm with the least had 0.3% of its shares owned by its managers.

Correlation Matrix of the Dependent and Explanatory Variables

The results of spearman's rank-order correlation test to determine the relationship between the research variables is presented in Table 3.

Table 3: ***Correlation Analysis***

	EDIS	MOWN	GEND	FORD	FSZE	PROF	LEVG
EDIS	1.0000						
MOWN	-0.4554*	1.0000					
GEND	0.1773*	0.0309	1.0000				
FORD	0.0428	-0.5607*	-0.3395*	1.0000			
FSZE	0.3607*	-0.4644*	0.3138*	0.5027*	1.0000		
PROF	0.0980	-0.2304*	0.3451*	-0.0254	0.2294*	1.0000	
LEVG	-0.1972*	0.0048	0.0559	-0.2136*	-0.3058*	0.2691*	1.0000

Source: Authors' Computations

Table 3 shows a positive relationship between corporate environmental disclosure quality (EDIS) and board gender diversity, foreign directorship, firm size and profitability, while EDIS has a negative relationship with managerial ownership and financial leverage during the study period. Furthermore, Table 3 shows that each variable correlates with itself at 1.000 and none of the correlation values exceeded the yard stick of 0.85 (Hair, *et al.*, 2006). Therefore, these correlation coefficients indicate the absence of multicollinearity among the variables of the study.

Multicollinearity Test

The result of this test indicated in Table 4 shows that the Variance Inflation Factor (VIF) is on average 1.82 for all the explanatory variables. This suggests the absence of multicollinearity (Hair, *et al.*, 2006).

Table 4: ***Multicollinearity Test***

Variables	VIF	1/VIF
FSZE	2.81	0.356
FORD	2.45	0.409
GEND	1.76	0.568
MOWN	1.47	0.681
LEVG	1.35	0.741
PROF	1.07	0.931

Mean VIF	1.82	

Source: Authors' Computations

Skewness/Kurtosis Test

This study applied the skewness/kurtosis method to test for data normality. The result of these tests shows that the values of the probability of chi^2 is significant, which implies that the residuals are not normally distributed. To correct this, cross sectional time-series Feasible Generalized Least Squares (FGLS) regression was conducted and there-after interpreted.

Table 5: ***Skewness/Kurtosis Tests for Normality***

Variable	Obs	Skewness	Kurtosis	Prob>Chi2
EDIS	128	0.000	0.009	0.000
GEND	128	0.003	0.004	0.002
FORD	128	0.021	0.000	0.000
MOWN	128	0.000	0.001	0.000
FSZE	128	0.007	0.668	0.006
PROF	128	0.000	0.000	0.000
LEVG	128	0.929	0.539	0.823

Source: Authors' Computations

Heteroscedasticity Test

The result of modified Wald test for group wise heteroscedasticity test shows the presence of heteroscedasticity as the probability of the chi-square 0.000 is less than 1% for the study. To correct this, cross sectional time-series FGLS regression was conducted and there-after interpreted.

Regression and Post Estimation Results

Table 6 presents the regression analysis along with the post estimation results:

Table 6: ***Cross-Sectional Time-Series FGLS Regression Result***

Variables		**Coefficient**	**Z-Stat**	**Prob**
Constant		-28.784	-3.37***	0.001
GEND		-14.604	-2.38***	0.017
FORD		-5.244	-1.00	0.319
MOWN		-7.806	-1.41	0.160
FSZE		9.932	7.08***	0.000
PROF		0.829	0.72	0.471
LEVG		-3.989	-1.26	0.207
Hausman	0.988			

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LM test	0.000			
Xttest3	0.000			
R-Square	0.35			
F-Statistics	2.74			
Prob>F	0.016			

Source: Authors' Computations

Table 6 shows regression results on the impact of board gender diversity, foreign directorship and managerial ownership on quality of environmental disclosure for the sampled firms during the study period. The result of the Hausman Specification Test (0.988) indicate that the fixed effect was better. Additionally, the results of the Lagrangian multiplier test (0.000) suggest that the random effect result was not efficient. Furthermore, the results of the heteroscedasticity test (0.000) indicate that the coefficient of the error term is not constant for all the explanatory variables. To correct this, cross-sectional time-series FGLS regression was conducted and subsequently interpreted because of the presence of heteroscedasticity and the fact that the time series data is greater than the cross-sectional. The value of F-statistics is 2.74 with a P-value of 0.016 suggests that the model is fit and the variables are well combined for the study. The multiple determination coefficient (R^2) of 0.35 indicates that 35% of the variation in the dependent variable (EDIS) of listed industrial goods firms in Nigeria is jointly explained by the changes in the explanatory variables namely, GEND, FORD, MOWN, FSZE, PROF and LEVG. This implies that 65% of the changes in EDIS of the sampled firms are explained by other variables not captured in the model of the study.

Hypotheses Testing

The test of hypothesis was done based on the regression results presented in Table 6

H_{01}: Which stated that board gender diversity has no significant impact on the quality of environmental accounting information disclosure by listed industrial goods companies in Nigeria is rejected.

H_{02}: Which stated that foreign directorship has no significant impact on the quality of environmental accounting information disclosure by listed industrial goods companies in Nigeria is accepted.

H_{03}: Which stated that managerial ownership has no significant impact on the quality of environmental accounting information disclosure by listed industrial goods companies in Nigeria is accepted.

Conclusion and Recommendations

Based on the findings of the study the following conclusions are drawn: The presence of female directors on the board results in a decrease in the environmental accounting information disclosed by the sampled firms. The negative and significant impact of female directors on the quality of environmental accounting information disclosure by listed industrial goods firms in Nigeria is largely attributed to the low or non-presence of female directors knowledgeable on environmental issues on the board of some of the sampled firms during the study period. Furthermore, the Nigerian industrial goods firms with foreign directors serving on their boards have a negative and insignificant impact on environmental accounting information disclosure. Their insignificant role can be attributed to the fact that some firms have no foreign directors. This implies that due to their complete absence or negligible number, their interest and knowledge, would not be transferred to boards of domestic firms in developing countries as directors. In addition, managerial ownership have a negative and insignificant impact on the Nigerian listed industrial goods firms which discourages firms from making high quality environmental accounting information disclosure during the period. When managers have little number of shares they are not motivated enough to increase the entities' values, as well as to increase shareholders' wealth, as they feel it will not increase their own wealth. Therefore, environmental information disclosure will only increase, if managers have the same interests as the owners, by having more shares in the industrial goods companies. Finally, the total summary indicates that listed industrial goods companies made low quality disclosures over the sixteen-year period of the study.

This study recommends that at least one woman knowledgeable and interested in environmental matters should be appointed to the board of industrial goods companies. This is because, the presence of such women on the boards increases accountability due to their great concern for the environment which ultimately leads to a higher quality of environmental accounting information disclosure. Furthermore, there should be at least one foreign director on the boards of the industrial goods companies. These foreign directors have better exposure and concern for the environment and can easily influence domestic directors on the need for environmental sustainability and hence, a higher quality of environmental accounting information disclosure. In addition, the Securities and Exchange Commission (SEC) should limit the shareholding of directors on the boards of listed industrial goods companies to 10% of the total shareholdings of the sampled firms. This is because as shareholders of the entities, they are motivated to increase the entities values, as well as to increase shareholders' wealth, as it will also increase their own wealth. Accordingly, environmental accounting information disclosure quality will increase. Finally, boards of listed Nigerian industrial goods firms should come up with strategies that would lead to a higher quality of environmental accounting information disclosures.

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