BOARD HETEROGENEITY, AUDIT COMMITTEE GENDER AND CORPORATE TAX AGGRESSIVENESS OF LISTED CONSUMER GOODS FIRMS IN NIGERIA

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Abstract
Aggressive tax planning are activities generally designed to reduce tax liability that includes tax evasion and legitimate saving of taxes. This study therefore aims to examine the impact of board heterogeneity on the tax aggressiveness, as well as the moderating effect of audit committee gender on the relationship between board heterogeneity and tax aggressiveness of listed consumer goods firms in Nigeria. Data were collected from one hundred and seventy financial years of firms in Nigeria from 2013-2022. The study analysed the data by means of descriptive statistics and correlation techniques. The regression results revealed that board nationality and board education have significant impact on tax aggressiveness. The finding of the study however, revealed that board composition has significant negative impact on tax aggressiveness. Similarly, the result from moderating model revealed that audit committee gender influenced the relationship between board heterogeneity and tax aggressiveness of the firms. The study therefore concludes that board heterogeneity is important in tax planning activities. The study recommends that the firms should maintain the number of foreign directors as well as maintaining the number of directors with training in accounting, finance and economics in order to continue to improving their tax planning activities. Similarly, the role of AC gender should be given ultimate attention when nominating AC members, since it improved the relationship between board heterogeneity and tax planning of consumer goods firms in Nigeria.
Keywords: Audit committee gender, board heterogeneity, corporate tax aggressiveness

Introduction

Taxes are viewed as an additional expense for the company and its shareholders since they decrease the cash flow that is accessible. In practice, management of businesses are expected to establish plans that would advance the interests of stakeholders and help their respective entities achieve the overarching goal of wealth maximization. Several empirical studies (such as Stephen et al. 2022; Dang & Nguyen, 2022; Islam & Hashim, 2023) concluded that in order to maximise profit margin, businesses have turned to using tax planning as genuine investment options that could guarantee a significant increase in after tax income levels through a careful reduction in the amount of tax liabilities, without undermining legal or regulatory requirements relating to the taxation of firms.
Tax aggressiveness could either be tax avoidance or tax evasion. Aburajab et al. (2019) defined tax aggressiveness as activities generally designed to reduce tax liability that includes tax evasion and legitimate saving of taxes. Tax planning is the process by which taxpayers utilize the loopholes in the tax laws in order to minimize tax liabilities. (Appah 2022). It could be argued that the naira saved through an aggressive tax practice is an extra naira available to shareholders because aggressive taxation leads to tax savings. Guenther *et al.* (2013) opined that tax avoidance is a measure of tax plan adopted by an entity which reduces

the amount of taxes the firm has to pay per earning. The authors further stated that what separates tax avoidance and tax aggressiveness is the fact that tax avoidance is a common optimization strategy and its action will most likely never be challenged by the tax authorities or any other controlling body. Whereas, tax aggressiveness involves both legal and illegal tax activities that can reduce tax liability, hence tax avoidance is a subset of tax aggressiveness.

The board of directors is a component of the business and its surroundings, and they offer the business resources to safeguard it against unforeseen environmental changes. As reported by Lawal et al. (2022), the board provides entrepreneurial and strategic leadership. Board heterogeneity is described as the distribution of the differences between members of the board relating to the characteristics of the differences in attitudes and opinions (Ararat et al., 2010). Board heterogeneity in respect of gender, nationality, composition and educational background is considered in this study due to its perceived effect on tax aggressiveness. Previous studies (such as Aburajab et al., 2019; Isa et al., 2022; Mohd Razali et al., 2023) concluded that the higher the diverse members of the board, the higher variability of cognitive style, thereby further enriching the knowledge, wisdom, ideas and approaches available to the company's board. It is thus believed that board heterogeneity will ultimately improve the quality of decision making including the decision on tax aggressiveness.

An Audit Committee's (AC) responsibility is to keep an eye on how the business is run and it is an internal control system to safeguard the interests of the shareholders. This committee seeks to strengthen the board's capacity to carry out its legal obligations and to guarantee the impartiality and reliability of the financial reports. Based on the role played by audit committee in safeguarding the interests of the stakeholders in the firms, this study, therefore, introduced audit committee gender as a moderating variable to examine its influence on the relationship between board heterogeneity and tax aggressiveness of the firms.

There are several studies (Oyeleke et al. 2016; Okoh &. Ofor 2022; Rimamsikwe & Sule 2022) which have investigated the relationship between board heterogeneity and tax aggressiveness in Nigeria, but none of these studies considered the effect of a moderating variable. This study fills the gap by considering the moderating effect of audit committee gender on the relationship between board heterogeneity and tax aggressiveness. Thus, this study examined the moderating effect of audit committee gender on the relationship between board heterogeneity and tax aggressiveness of consumer goods firms in Nigeria during the period 2013 to 2022.

Literature Review and Hypotheses Development

Concept of Tax Aggressiveness

The concept of tax aggressiveness explains the legal means of reducing a tax payer's income tax liability. Soufiene, et al (2016) state that tax planning practices involves the minimization of corporate income tax for the purpose of maximization the after-tax income. Similarly, Yuniarsih (2018), stated that tax aggressiveness is the application of accounting methods and techniques by a tax payer in accordance with relevant tax provision so that income tax payable becomes minimal.

Concept of Board heterogeneity

Ararat et al. (2010) defined board heterogeneity as the distribution of the differences between members of the board relating to the characteristics of the differences in attitudes and opinions. Van der Walt and Ingley (2003) also defined it as the varied combination of attributes, characteristics and skills that the members of board have. Board heterogeneity in respect of gender, nationality, composition, expertise and size are considered in this study.

Gender Diversity and Tax Aggressiveness

Gender diversity is defined as the ratio of female board members to all board member. Various studies has been conducted in the area of board gender diversity and tax aggressiveness, some found positive results, while some found negative results while other found no relation between the two variables. For instance, Nwezoku and Egbunike (2020) concluded that gender diversity had significant positive impact on tax aggressiveness of quoted healthcare manufacturing firms in Nigeria during the period 2011 to 2018. In a study of 394 listed firms in Bursa Malaysia from 2014 to 2016, Mohd Razali et al. (2023) concluded that gender diversity had a positive significant impact on tax. However, in a study of banks listed on the Nigerian Stock Exchange, Oyeleke et al. (2016) concluded that a non-significant association exist between female directors and tax aggressiveness of the banks using cross-sectional data. Using sample from all sectors of the company in Indonesia Stock Exchange during the period 2012 – 2017, Budi (2019) found that gender diversity did not have any influence on tax avoidance. Similarly, Okoh et al. (2022) investigated corporate board attributes and tax aggressiveness of seventy-five listed non-financial firms in Nigeria from 2012 to 2021 and concluded that gender diversity had no significant effects on tax aggressiveness of listed non-financial firms in Nigeria. Thus, the following hypothesis is formulated and tested:

Ho_1: Board gender diversity has no significant impact on tax aggressiveness

Board Nationality Diversity and Tax Aggressiveness

With increasing globalisation, firms tend to modify their governance structures by having more foreigners on their boards (Oxelheim et al., 2013). This is the ratio of foreign directors on the board to total board members. Using data from annual reports and accounts of quoted healthcare manufacturing firms in Nigeria during the period 2011 to 2018, Nwezoku and Egbunike (2020) concluded that nationality diversity had a non-significant positive effect on tax aggressiveness. Okoh et al. (2022) investigated corporate board attributes and tax aggressiveness of seventy-five listed non-financial firms in Nigeria and concluded that board CEO nationality had positive and significant effects on tax aggressiveness of firms.

Ho_2: Board nationality diversity has no significant impact on tax aggressiveness

Board composition and Tax Aggressiveness

Board composition is defined as the proportion of outside directors (non-executive) to the total number of directors (Haniffa & Hudaib, 2006). In a study of Jordanian firms during the period 2013-2017, Aburajab et al. (2019) found that there is a negative relationship between board composition and tax aggressiveness. Okoh et al. (2022) investigated corporate board attributes and tax aggressiveness of seventy-five listed non-financial firms in Nigeria from 2012 to 2021 and found that board independence had positive and significant effects on tax aggressiveness of listed non-financial firms in Nigeria. Rimamsikwe et al (2022) examined the effect of board attributes on tax aggressiveness of listed consumer goods companies in Nigeria from 2014 to 2020 and found that board independence had positive significant impact on ETR.

Ho_3: Board composition does not have a significant impact on tax aggressiveness

Board Educational Background Diversity and Tax Aggressiveness

Ruigrok et al. (2006) opined that educational background diversity means the difference of knowledge or skill among board members that will help to create the best solution for resolving issues and making formulation and evaluation in the strategic decision-making process. In a study of seventy-five listed non-financial firms in Nigeria from 2012 to 2021, Okoh *et al.* (2022) concluded that board expertise had positive and significant effects on tax aggressiveness of listed non-financial firms in Nigeria. Rimamsikwe et al. (2022) examined the effect of board attributes on tax aggressiveness of listed consumer goods companies in Nigeria from 2014 -2020 and found that board independence and board financial expertise had positive significant impact on ETR.

Ho_4: Board educational background does not have a significant impact on tax aggressiveness

Audit Committee Attribute and Tax Aggressiveness

Audit Committee attributes may have an important role in oversight tax planning. Few empirical findings investigate the relationship between AC attributes and tax aggressiveness. Dang et al. (2022) found that size of the AC had a positive impact on tax avoidance. The study further found that the proportion of female members and financial and accounting experts of the AC had no impact tax avoidance behaviors of the firms. In a study, Stephen et al. (2022), examined the effect of AC attributes on tax aggressiveness of listed oil and gas companies in Nigeria from 2011-2020 and found that AC frequent meeting and audit committee financial expertise had significant positive impact on ETR. The study however found that AC size and AC independence had no significant impact on tax aggressiveness of the firms. Islam et al. (2023) investigated the effect of AC attributes on tax avoidance of the selected fuel & power sector companies listed on DSE of Bangladesh 2016 to 2020 and found that the interaction of AC size had negative significant relationship with corporate tax avoidance, while the interaction of AC meeting and AC independence had positive significant impact on corporate tax avoidance. Thus, based on the role play by AC in an organisation, this study therefore examines the moderating role of AC gender on the relationship between board heterogeneity and tax aggressiveness of consumer goods firms in Nigeria.

Ho_5: Audit committee gender does not moderate the relationship between board heterogeneity and tax aggressiveness

Theoretical framework

Agency theory

The Agency theory states that the function of the board of directors is an internal control tool that works to protect shareholders' interests from the opportunistic behavior of managers and to reconcile the interests of managers and shareholders (Jensen, 1993). As regards tax avoidance actions, economists trust that corporate governance mechanism usually assists in mitigating agency conflict and offer several governance instruments to create a suitable one intended for companies (Dang et al., 2022). In addition, Beasley and Salterio (2001), stated that corporate boards, as well as audit committees are imperative internal overseeing instruments. Corporate Tax Aggressiveness (CTA) involves a multiple player; shareholders, insiders/managers, and the government, there would inevitably be a conflict of interest.

Chen and Chu (2005) were among the first researchers to examine the nexus between corporate governance and CTA through the lenses of the agency theory. They argued that CTA is devised through managers deliberately ensuring the existence of information asymmetry between the firm and the tax authorities so that they are able to find avenues to lower their tax payments and in order to avoid tax authorities' discovery. Similarly, CTA is linked to the agency problem in that it is seen as a technique for creating a shield for management and opportunism.

Methodology

This study adopted descriptive and correlation research designs because the data are available and the researcher has no control over it. The population of the study is the consumer goods quoted on the Nigeria Exchange Group (NGX) as at 31st December 2022. There are twenty-one (21) consumer goods firms quoted in Nigeria as at 31st December, 2022. However, for firms to be part of the sample, there are some criteria which have to be met as follows: firstly, firms must have been quoted on the Nigeria Exchange Group as at 1st January 2013; secondly, firms must not have any omission in its data during the period of the study and finally, firms must not change its name, merge or being taken over during the period of the study. After the above filters, seventeen (17) consumer goods firms made the population and were selected as sample of the study. Multiple regression and correlation techniques and descriptive statistics were applied on data to draw inferences using STATA.

Variables and their Measurement

Four variables are used in this study: these are the dependent variable, the independent variables, the moderating variables and the control variables.

Dependent variables

The dependent variable is the corporate tax aggressiveness (CTA). Researchers in the field of CTA used different measures of tax aggressiveness such as cash effective tax rate, book-tax difference measures and a residual book-tax difference.

Independent variables

The board heterogeneity which includes board gender, board composition, board education and board nationality are the independent variables in this study.

Moderating variable

The moderating variable in this study is the AC gender which is measured as number of female audit committee members to total number of audit committee members.

Control variables

In this study, two control variables are used. These are board size and firm size.

Model Specification

In order to examine the moderating effect of AC gender on the relationship between board heterogeneity and tax aggressiveness, after reviewing the empirical literature, this study adapts the model used by Islam et al. (2023) and the models are stated below.

$ETR_{it}=\beta_0+\beta_1 BGD_{it}+\beta_2 BND_{it}+\beta_3 BDC_{it}+\beta_4 BED_{itt}+\beta_5 BSZ_{it}+\beta_6 FSZ_{it} + \varepsilon_{it}$ ------------- Model 1

This study introduced audit committee gender diversity as a moderating variable. The following regression model is used to examine the moderating role of AC gender diversity on the relationship between board heterogeneity and tax aggressiveness.

$ETR_{it}=\beta_0+\beta_1 BGD_{it}+\beta_2 BND_{it}+\beta_3 BDC_{it}+\beta_4 BED_{itt}+\beta_5 ACG_{it}+\beta_6 BSZ_{it}+\beta_7 FSZ_{it}+\varepsilon_{it}$-----------Model 2

$ETR_{it}=\beta_0+\beta_1 BGD_{it}+\beta_2 BND_{it}+\beta_3 BDC_{it}+\beta_4 BED_{it}+\beta_5 BGD_{it}*ACG+\beta_6 BND_{it}*ACG+\beta_7 BDC_{it}*ACG +\beta_8 BED_{it}*ACG +\beta_{10} ACG_{it}+\beta_{11} BSZ_{it}+\beta_{12} FSZ_{it}+ \varepsilon_{it}$ ------------ Model 3

Where:

ETR_{it} = Effective Tax Rate (tax aggressiveness)

BGD_{it} = Gender Diversity

BND_{it} = Nationality Diversity

BDC_{it}= Board Composition

BED_{it} = Educational Diversity

BSZ_{it} = Board Size

FSZ_{it} = Firm size

ACG_{it} = Audit committee gender diversity

ε_{it} = Error term

β_0 = Constant

β_1= Constant

Table 1: Measurement and Operationalization of Variables

Proxies	Measurement
Tax Aggressiveness= effective tax rate (ETR)	Total tax income divided by pre-tax income (Aburajab et al., 2019; Islam et al., 2023)
Board Gender Diversity (BGD)	Gender diversity is defined using Blau Index $BLAU$ Index=$1-\sum_{i=1}^{n} P_i^2$ where Pi is the percentage of members in each gender and n is the total number of genders (Nadeem, 2019, Barde et al., 2022).
Board Nationality Diversity (BND)	Number of foreign directors divided by the total number of board members (Isa et al., 2022)
Board Educational Level (BED)	Variation of education background is measured by the percentage between member of board with accounting, finance, management and economic education background and all of the members of the board (Isa et al., 2022).
Board Composition (BDC)	Proportion of board of directors, who are non-executives (Nyarko et al., 2018; Barde et al., 2022)
Board Size (BSZ)	Board size is measured as the total number of board members both executives and non-executives (Abeysekera, 2010)
Firm Size (FSZ)	Natural logarithm of Total Assets (Alshhadat, 2017)
AC gender diversity (ACG)	AC gender diversity is measured as the proportion of female audit committee members to total number of audit committee members (Barde et al., 2022)

Source: Authors' Compilation

Results and Discussion

This section presents and discusses the results of the study. The results were presented using tables.

Descriptive Statistics

Table 2: Descriptive statistics of the variables

Variables	Observation	Mean	Std. Dev.	Min.	Max.
ETR	170	0.255	0.855	-5.946	4.585
BGD	170	0.470	0.090	0	0.612
BND	170	0.289	0.210	0	0.67
BDC	170	0.844	0.054	0.583	0.92
BED	170	0.626	0.105	0.25	0.88
BSZ	170	8	2.505	4	12
FSZ	170	7	0.926	4	8
ACGD	170	0.295	0.136	0	0.67

Source: Generated by the Authors

Table 2 showed that the sampled Nigerian consumer goods firms have average ETR at 0.255. The mean value of the board gender diversity of the sampled consumer goods firms is 0.47. The mean value of board nationality is 0.29, meaning that, on average, 29% of the total numbers of directors are foreigners.

Table 2 also showed that on average,.84% of the total number of directors are non-executive directors. The mean value of education background of the directors is 63% on average. Board size has a minimum value of four (4) and a maximum value of seventeen (13). The mean value of AC gender composition is 0.295, which indicates that on average, 30% of the firms' have women as part of audit committee members during the study period.

Correlation Matrix

The correlation matrix as presented in Table 2 shows the association between dependent variables and explanatory variables.

Table 3: Correlation Matrix

Var.	ETR	BGD	BND	BDC	BED	BSZ	FSZ	ACGD	VIF
ETR	1.00								
BGD	-0.28	1.00							1.34
BND	0.37	-0.19	1.00						1.25
BDC	-0.12	0.11	-0.03	1.00					1.15
BED	0.21	0.18	0.30	0.22	1.00				1.27
BSZ	0.46	-0.35	0.27	0.22	0.17	1.00			1.53
FSZ	0.02	0.04	-0.02	-0.08	0.02	0.08	1.00		1.03
ACGD	-0.06	0.28	-0.01	-0.06	0.08	-0.39	-0.06	1.00	1.26

Source: Generated by the Authors

Table 3 presents the correlation analysis and VIF of the study. Variance inflation factors (VIF), tolerance levels and the correlation matrix were used to check for multicollinearity. The results demonstrated a lack of multicolliearity since the minimum VIF is 1.03 and the maximum VIF is 1.54 respectively.

Regression Results of Direct Relationship

The regression result of the robust Ordinary Least Square (OLS) estimation technique is presented in Table 4. The Table presents the coefficient and probability of the OLS.

Table 4: OLS Regression of Direct Relationship

Variables	**Coefficients**	**Prob.**
Cons	8.354	0.000
BGD	-1.170	0.155
BND	0.856	0.002
BDC	-1.770	0.000
BED	1.368	0.042
BSZ	0.145	0.000
FSZ	0.047	0.357
R-square	0.35	
F-Statistic	13.05	
Prob. F	0.0000	

Source: Results Output from STATA

The proportion of the overall variance in the dependent variable that the independent variables collectively explained was given by the cumulative R-squared (R2) of 0.35. In other words, it means that the proportion of women directors on the board, the nationality of the board, the composition of the board and the education level of the board of directors used in the study all explained 35% of the variation in ETR of the study firms in Nigeria. The F statistics of 13.05, which is significant at one percent, indicates that board heterogeneity and ETR model is fit. The P-value of F-statistics which is statistically significant at a level of 0.0000 implies that there is 99.9 percent probability that the relationship among the variables were not due to mere chance.

Table 4 revealed that the coefficient value for gender diversity was -1.170 with a p-value of 0.155. This signifies that gender diversity has a negative and non-significant effect on ETR of the firms. Hypothesis one states that gender diversity does not have significant impact on ETR. Thus, based on the results of the regression which is non-significant at 5%, we therefore fail to reject the null hypothesis. This finding is in line with those of Oyeleke et al.., (2016), Okoh et al. (2022). But it is contrary to those of Nwezoku et al. (2020), Mohd Razali et al. (2023).

Board nationality recorded a coefficient value of 0.856 with a p-value of 0.002 which is significant at 1% level. This implies that the presence of foreigners on the board of the firms has significant impact on ETR. Hypothesis two infers that board nationality has no significant impact on ETR. However, based on the finding of the study, the null hypothesis is therefore rejected. This finding is in line with those of Okoh et al. (2022). However, it is in contrast to those of Nwezoku et al. (2020). Similarly, board education has a coefficient value of 1.368 with a p-value of 0.042 which is significant at 5%. This implies that for every increase in the number of directors with education in accounting, finance and economics, the firms were able to have effective tax planning activity. Hypothesis four states that board education has no significant impact on ETR. However, based on the results of the regression which is significant at 5%, we therefore reject the null hypothesis. This concurs with the findings of Rimamsike et al. (2022), Okoh et al. (2022).

Board composition has a coefficient value of -1.770 which is significant at 1%. This implies that for every increase in the number of non-executive directors, there is a decrease in tax planning activities of the firms. Hypothesis three states that board composition has no significant impact on ETR. However, based on the results of the regression which is significant at 1%, we therefore reject the null hypothesis. This concurs with the finding of Aburajab et al. (2019). However, study such as Rimamsike et al. (2022), Okoh et al. (2022). Contradict our findings.

Board size has a coefficient value of 0.145 which is significant at 1%. This implies that for every increase in the number of board members, there is an increase in the level of tax planning of the firms. The regression results showed that firm size has no significant impact on ETR of the firms.

Regression Results of Pre-moderation and Interaction Models

The regression results of the robust Ordinary Least Square (OLS) estimation technique (pre-moderation and interaction models) is presented in Table 6.

Table 5: OLS Regression of Pre-moderation and Interaction Models

Variables	**Pre- moderation model**		**Interaction model**	
	Coefficients	**Prob.**	**Coefficients**	**Prob.**
Cons	8.050	0.000	9.903	0.000
BGD	-1.408	0.103	-3.017	0.002
BND	0.792	0.003	1.799	0.029
BDC	-3.726	0.000	-4.982	0.122
BED	1.304	0.048	0.714	0.663
BGDACG			7.581	0.414
BNDACG			3.451	0.025
BDCACG			4.537	0.005
BEDACG			1.584	0.039
ACGD	0.905	0.023	0.876	0.041
BSZ	0.163	0.000	0.171	0.000
FSZ	0.061	0.271	0.031	0.538
R-Squared	0.3642		0.3943	
F-Statistics	11.48		11.14	
Prob. F	0.0000		0.0000	

Source: Results Output from STATA

Findings from the panel data regression analysis of models two and three in Table 6 indicated that, R^2 were 0.3642 and 0.3943. This therefore means that, the two models were capable of explaining about 36% and 39% of the systematic variation in the value of dependent variable. The finding from pre-moderation showed that the coefficient value of ACGD is 0.905 which is significant at 5%. As a result, the relationship between board heterogeneity and ETR can be moderated by ACGD. The fifth hypothesis asserts that ACGD does not moderate the relationship between board heterogeneity and ETR. However, in view of the regression result which is significant at 5%, we therefore reject the null hypothesis.

The result from the moderated model revealed that board nationality, board composition and board education have coefficient values of 3.451, 4.537 and 1.584 with probability values of 0.025, 0.005 and 0.039 which are deemed to be significant at 1% and 5% respectively. However, the finding from the moderated board gender revealed no significant impact on ETR. of the firms. Therefore, based on the finding of the study, it means that audit committee gender composition improves the relationship between board heterogeneity and ETR of the firms.

Conclusion

Most of research findings on corporate governance attributes have been conducted in developed and other emerging economies. Because of differences in economic situations, regulatory systems, and governance procedures affecting board heterogeneity in different countries, generalizing the findings of these research to most developing nations, particularly Nigeria, may be impossible.

In light of the foregoing, this study investigated the moderating role of audit committee gender on the relationship between board heterogeneity and tax aggressiveness of 170 (firms' year) observation of Nigerian listed consumer goods firms during the period 2013-2022. Thus, the study concludes that:

1. Board nationality and board education have significant positive impact on tax aggressiveness.
2. Board composition has a negative and significant impact on tax aggressiveness.
3. Board gender diversity has no significant impact on tax aggressiveness.
4. AC gender influences the relationship between board heterogeneity and tax aggressiveness of the firms.

Recommendations

This study offers some interesting insight into board homogeneity and its effect on tax aggressiveness of the studied firms.

1. The firms should maintain the number of foreign directors as well as maintaining the number of directors with training in accounting, finance and economics in order to continue to improving their tax planning activities.
2. The composition of the board of directors should be looked at so as to enhance their tax planning activities.
3. The management should ensure that the board of directors composition include more female directors in order to enhance tax planning activities of the firms.
4. The role of AC gender should be given ultimate attention when nominating AC members, since it influenced the relationship between board heterogeneity and tax planning of consumer goods firms in Nigeria.

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