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GENDER DIVERSITY AND AGGRESSIVE TAX AVOIDANCE OF LISTED FINANCIAL SERVICES FIRMS IN NIGERIA: MODERATING ROLE OF AUDIT QUALITY

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Abstract

This study investigates how board gender diversity (BGD) influences aggressive tax avoidance among listed financial services firms in Nigeria with the moderating effect of audit quality. Despite a statutory 30% company income tax rate, many profitable Nigerian firms pay considerably less through various tax avoidance strategies. Motivated by the persistent issue of aggressive tax avoidance that undermines government revenue and questions corporate governance effectiveness, the study aims to assess the effect of BGD on aggressive tax avoidance, evaluate audit quality's influence, and determine whether audit quality moderates the BGD–tax avoidance relationship. Using a purposive sample of 33 financial service firms from 2006–2022, the research adopts a panel data regression estimated through the Random Effects Model (REM) and selected via the Hausman test. Results show that BGD has a positive and significant relationship with aggressive tax avoidance, indicating that higher female board representation does not necessarily reduce tax aggressiveness. Although audit quality (proxied by Big 4 affiliation) has no direct significant effect, it becomes significant when interacting with BGD by suggesting that quality audits strengthen the association between gender diversity and tax aggressiveness. The study concludes that internal (BGD) and external (audit quality) governance mechanisms jointly influence tax behavior in Nigeria's financial sector. It recommends that regulators such as the Central Bank of Nigeria (CBN), Security and Exchange Commission (SEC), Nigeria Exchange (NGX) Group, and Federal Inland Revenue Services (FIRS) go beyond gender quotas to promote ethical governance and enforce stronger audit oversight, while firms should ensure meaningful female participation in core governance committees to encourage responsible tax conduct.

Keywords: aggressive tax avoidance, audit quality, board gender diversity, Nigeria

1. Introduction

Tax avoidance has been widely regarded as a motivating factor in many corporate decisions, owing to the benefits received by firms from corporate tax avoidance. Although the statutory companies' income tax rate is 30% in Nigeria, the actual tax rates also called the Effective Tax Rate (ETR hereafter) that firms in Nigeria pay is usually far less than 30%, thus, making the statutory rate of tax a fable. In Nigeria, it is difficult to state exactly who the winners or losers are in corporate taxation due to lack of empirical data at the moment; however, it is believed that many companies

partake in the game of tax avoidance and even industries in Nigeria (Lanis & Richardson, 2011; Hanlon & Slemrod, 2009; Landolf, 2006).

Corporations are increasingly expected to demonstrate their compliance with tax rules and regulations to their shareholders, because shareholders are careful for the fact that tax avoidance, on the long run, reduces their investment returns (Henderson Global Investors, 2005). The convergence of corporate governance and corporate tax avoidance presents a critical area of study, particularly in emerging economies like Nigeria. Globally, board gender diversity (BGD) has emerged as a significant governance mechanism theorized to enhance ethical conduct and strategic decision-making (Adams & Ferreira, 2009; Terjesen et al., 2009).

Concurrently, aggressive tax avoidance remains a contentious issue, impacting government revenue and social equity (Sikka, 2010; Zucman, 2015). Nigeria's financial services sector, pivotal to the economy yet a potential arena for aggressive tax strategies, forms the empirical focus of this study. Nigeria faces a substantial "tax gap," with revenues at just 6% of GDP, far below international averages (World Bank, 2023; FIRS, 2022). This shortfall is worsened by aggressive corporate tax avoidance practices (Odia & Ogiedu, 2013; Adeyemi & Fagbemi, 2020).

Theoretically, BGD is posited to curb such practices. Agency theory suggests women directors enhance monitoring and reduce managerial opportunism (Jensen & Meckling, 1976; Richardson et al., 2016). Resource Dependence Theory indicates they bring diverse, risk-averse perspectives (Pfeffer & Salancik, 1978; Croson & Gneezy, 2009), while Stakeholder and Legitimacy Theories propose a stronger orientation toward societal obligations and ethical conduct (Freeman, 1984; Suchman, 1995; Bear et al., 2010). However, the Nigerian context is characterized by male-controlled norms (Okoye et al., 2021; Amao et al., 2023), and institutional weaknesses (Transparency International, 2024).

Furthermore, the effect of BGD likely interacts with external governance like audit quality (proxied by Big 4 auditors), which provides rigorous scrutiny of tax positions (Badertscher et al., 2013; Okolie, 2024). This study investigates the BGD and aggressive tax avoidance nexus in Nigerian financial services firms and the moderating role of audit quality.

The main objective of this study is to investigates the effect that board gender diversity has on aggressive tax avoidance practices of listed financial services firms on the Nigerian Exchange Group, and also, how good audit quality reduces or strengthens the relationship between board of directors' characteristic observed and tax avoidance in the population of study. Other specific objectives are as follows:

(i) Examine the effect of board gender diversity on aggressive tax avoidance practices among listed financial services firms on Nigerian exchange group.
(ii) Evaluate the effect of audit quality on tax avoidance practices among listed financial services firms on Nigerian exchange group.
(iii) Determine if audit quality moderates between board characteristics and tax avoidance.

The study formulated hypotheses in null form.

H_{01}: Board gender diversity has no significant effect on corporate tax avoidance of listed financial services firms in Nigeria.

H_{02}: Audit quality does not have significant effect on tax avoidance practices among listed financial services firms in Nigeria.

H_{03}: Audit Quality does not significantly moderate the effect of board gender diversity on tax avoidance practices among listed financial services firms in Nigeria.

The research offers several important contributions. Theoretically, it tests governance theories within Nigeria's unique context by integrating both internal (board governance dynamics—BGD) and external (audit) governance mechanisms. Practically, it provides valuable insights for firms, regulators such as the Central Bank of Nigeria (CBN), the Securities and Exchange Commission (SEC), and the Nigerian Exchange Group (NGX), as well as tax authorities like the Federal Inland Revenue Service (FIRS), investors, and advocacy groups. In terms of policy impact, the study informs Nigerian policy on revenue mobilization, particularly aligning with the objectives of the National Tax Policy of 2017, and enhances understanding of financial sector governance. Academically, it fills a critical gap in African empirical research and lays a solid foundation for future studies in the field.

The rest of the paper is organized as follows: section 2 explains the concept of tax avoidance and the different measures of it. The section reviews theoretical and empirical literature on the possible determinants of tax avoidance. Section 3 describes the design, sample, data and analytical techniques adopted in this paper. Section 4 reports the empirical findings and other robustness tests. Finally, section 5 presents the summary and concluding remarks.

2. Literature Review

Concept of Board Gender Diversity

BGD signifies the meaningful inclusion of women on boards, bringing varied perspectives, experiences, and cognitive approaches (Adams & Ferreira, 2009; Terjesen et al., 2009). It enhances monitoring, decision-making, and legitimacy (Bear et al., 2010; Post & Byron, 2015). It is measured by proportion, Blau Index, or critical mass (Kanter, 1977; Torchia et al., 2011).

Review of Empirical Literature

This section reviews empirical studies related to the core variables and relationships under investigation, providing a foundation for the study's hypotheses. The Relationship Between Board Gender Diversity (BGD) and Aggressive Tax Avoidance. Empirical evidence on the link between BGD and aggressive tax avoidance is mixed, reflecting the influence of institutional and industrial contexts.

Richardson et al. (2016) in a study of Australian firms found that gender-diverse boards were associated with higher effective tax rates, indicating less aggressive tax avoidance, due to enhanced monitoring and risk aversion. Likewise, in the study of Liao et al. (2014), examining Chinese listed companies, documented that firms with a higher proportion of female directors engaged in less tax aggressiveness, a result they attributed to a more conservative and ethical decision-making approach.

Francis et al. (2014) in the US context discovered that firms with female Chief Financial Officers (CFOs) were associated with lower levels of tax avoidance, suggesting that female financial executives exhibit greater risk aversion in tax planning. Also, Huseynov et al. (2017) found that BGD was linked to a lower likelihood of engaging in abusive tax shelters, arguing that female directors heightened ethical sensitivity and stakeholder orientation deterred the most aggressive tax strategies. Furthermore, Lanis & Richardson (2015) demonstrated that corporations with more gender-diverse boards had a lower propensity for aggressive tax planning, aligning the findings with stakeholder theory and the notion of corporate social responsibility.

Barua & Davidson (2016), contrary to mainstream theory, found a positive association between BGD and tax aggressiveness in certain US settings, suggesting that female directors may conform to existing corporate cultures or possess the sophisticated financial knowledge to pursue complex tax strategies. In another study, Gaaya et al. (2017), in a French study, found that the effect of BGD was not universal but contingent on ownership structure, with its impact being muted in family-owned firms. Also, Minnick & Noga (2010) reported an insignificant relationship between gender diversity and tax management in their US-based analysis, indicating that other governance factors may be more determinative.

A study in the Kenyan context by Adhiambo (2021) found a positive but insignificant effect of BGD on tax avoidance, highlighting that in developing economies, token female representation without real influence may not alter corporate outcomes. Also, Laguir et al. (2018) in their study concluded that the BGD-tax avoidance relationship is non-linear, often requiring a "critical mass" (typically at least three women on the board) to have a significant mitigating effect, a threshold not always met in many firms.

The role of high-quality auditors, typically proxied by Big 4 affiliation, in constraining tax avoidance is also a subject of ongoing debate. Badertscher et al. (2013) found that private equity-owned firms, which often engage Big 4 auditors, exhibited less tax aggressiveness due to the heightened scrutiny and reputational concerns of these auditors. McGuire, Wang, & Wilson (2012) demonstrated that Big 4 auditors were associated with higher effective tax rates, as their extensive resources and deep expertise allow them to detect and dissuade aggressive, potentially non-sustainable tax positions. Okolie (2024), in a Nigerian study, provided evidence that firms audited by Big 4 affiliates had significantly lower levels of tax sheltering, underscoring the relevance of audit quality in an emerging market context.

Gul et al. (2013) showed that the presence of a Big 4 auditor mitigated the positive relationship between managerial ownership and tax avoidance, acting as an effective external monitoring mechanism. In another study, Kim, Lee, & Lee (2015) found that auditor industry specialization, a dimension of audit quality, was negatively related to tax avoidance, as specialists possess the specific knowledge to assess the risks of complex tax transactions.

Hanlon et al. (2012) argued that the relationship is complex, finding that while Big 4 auditors constrain the most egregious forms of tax avoidance, they may also facilitate sophisticated tax planning for their clients through their extensive tax advisory services. Also, Donohoe & Knechel (2014) reported that auditor-provided tax services were associated with lower cash effective tax rates, suggesting that knowledge spillovers from auditing and consulting can enable more effective tax reduction. A study in South Africa by Moloi (2020) found an insignificant direct relationship between Big 4 auditors and tax avoidance, suggesting that client pressure and fee dependence in concentrated markets can compromise auditor independence.

Armstrong et al. (2015) in a broad governance study, found that the direct effect of audit quality was often subsumed by other stronger governance mechanisms, rendering it insignificant in some model specifications. Dyreng et al. (2010) focused on executive influence, finding that the effect of individual executives on tax avoidance was more pronounced than the identity of the external auditor.

The interaction between internal governance (like BGD) and external governance (audit quality) is a critical and under-researched area, especially with respect to tax outcomes. Gaaya et al. (2017) explicitly tested and found that audit

quality strengthened the negative relationship between board independence and tax avoidance in French firms, confirming its role as a complementary governance mechanism.

Lanis & Richardson (2015) in their analysis, suggested that the presence of a Big 4 auditor amplified the constraining effect of corporate social responsibility (which is often linked to diverse boards) on tax aggressiveness, while Richardson et al. (2016) in their study implied that the monitoring rigor of a gender-diverse board is more effectively translated into action and credible reporting when supported by a high-quality external auditor.

A Kenyan study by Otieno (2022) found that audit quality positively moderated the relationship between board expertise and tax compliance, demonstrating the synergistic effect of internal and external governance in an African context. Likewise, Chen, Li, & Wang (2021), examining Chinese listed firms, documented that high-quality audit strengthened the negative impact of effective internal controls on aggressive tax avoidance, highlighting the reinforcement between internal systems and external verification.

Theoretical Review

The proposition that greater board gender diversity (BGD) curbs corporate tax aggressiveness is underpinned by a combination of complementary theoretical frameworks. These theories, drawn from management, finance, and sociology, suggest that women directors influence corporate tax strategy through distinct yet interconnected mechanisms: enhanced internal governance, enriched board capital, a redefined ethical orientation, and the strategic management of external legitimacy.

Rooted in the principal-agent problem, Agency Theory (Jensen & Meckling, 1976) posits that managers may pursue self-interested strategies, including high-risk tax avoidance, that do not align with shareholder interests. From this perspective, BGD strengthens the board's fiduciary role. Empirical evidence suggests that gender-diverse boards exhibit more rigorous monitoring, heightened skepticism, and a lower tolerance for managerial opportunism (Richardson et al., 2016; Lanis & Richardson, 2015). Consequently, BGD acts as a governance mechanism that systematically challenges and curtails excessively aggressive tax positions that carry significant reputational and financial risks.

Resource Dependence Theory (Pfeffer & Salancik, 1978) views boards as providers of critical resources. BGD expands the board's "capital" by introducing diverse cognitive resources, risk appetites, professional networks, and unique expertise (Hillman et al., 2007; Bear et al., 2010). Women directors often bring different perspectives on risk and long-term sustainability, which can lead to a more comprehensive assessment of the non-financial costs of aggressive tax avoidance (e.g., reputational damage, stakeholder backlash). Thus, the unique resources afforded by BGD contribute to a more cautious and holistic evaluation of tax strategies.

Stakeholder Theory (Freeman, 1984) argues that firms must balance the interests of all stakeholders, not just shareholders. BGD is frequently associated with a more inclusive and empathetic leadership style, fostering a corporate culture that prioritizes ethical conduct and social responsibility (Boulouta, 2013; Hoi et al., 2013). Within this framework, aggressive tax avoidance is not merely a financial decision but a breach of a firm's social contract. A gender-diverse board is more likely to frame tax payments as a fundamental aspect of corporate citizenship, thereby discouraging strategies that undermine societal welfare.

3. Methodology

This section delineates the methodological framework employed to empirically investigate the relationship between board gender diversity, audit quality (Big 4), and tax avoidance in listed Nigerian financial services firms, explicitly testing the moderating role of audit quality. It provides a comprehensive blueprint for the research design, ensuring rigor, reliability, and replicability.

The chosen methodology aligns with the research questions and hypotheses derived from the theoretical (primarily Agency Theory) and empirical foundations established in the review of literatures. Its primary aim is to provide a transparent and defensible pathway for generating valid and reliable findings that address the identified research problem and contribute meaningfully to the extant literature.

The study population and sample selection criteria, justifies the econometric model specification, meticulously defines and operationalizes all variables (dependent, independent, moderator, controls), describes the procedures for data collection from primary sources, and outlines the data analysis techniques, including preliminary diagnostics, estimation methods, and robustness checks. The domain of this study is Listed Financial Services Firms on the Nigerian Exchange Group (NGX). This firms cut across Commercial Banks, Insurance Companies, and other categorized financial institutions (Discount Houses, Investment Banks, potentially FinTechs if listed and classified as such by the NGX).

The target population comprises all firms classified under the financial services sector and listed on the NGX as of December 31, 2023. Based on the NGX official listings and categorization, the population size is 49 listed financial services firms. To ensure data availability, consistency, and relevance for longitudinal analysis, firms are deliberately selected based on pre-defined criteria which are essential for the study's objectives.

To be included in the final sample, firms were required to fulfill all of the following selection criteria. First, regarding listing duration, a firm must have been listed on the Nigerian Exchange Group (NGX) prior to January 1, 2006, and remained continuously listed until at least December 31, 2023, ensuring it was subject to the exchange's listing rules and corporate governance requirements for the entire study period.

Second, complete data availability was mandatory, meaning firms had to have complete, audited, and publicly available annual financial reports for the full seventeen-year period from 2006 to 2022, which was crucial for constructing a consistent longitudinal dataset. Finally, firms had to meet the criterion of variable completeness, providing complete and accessible information within their financial and corporate governance reports for all variables specified by the study's model throughout the 17-year window. This includes data necessary to calculate Aggressive Tax Avoidance proxies (CETR), data on Board Gender Diversity, information on the External Auditor (to determine Big 4 affiliation annually), and data for control Variables (Total Assets, Net Income, Pre-tax Income, Total Debt). Applying these criteria above resulted in a final sample size of 33 listed financial services firms.

Model Specification

To test the hypothesized relationships, including the moderating effect of Audit Quality (Big4), a multiple regression framework using panel data is specified. Panel data controls for unobserved time-invariant firm heterogeneity and leverages both cross-sectional and temporal variations. Base Model (Direct Effects Only):

$CETR_{it} = \alpha_0 + \beta_1 BGENDV_{it} + \beta_2 BIG4_{it} + \beta_3 FSIZE_{it} + \beta_4 PROFIT_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$; Where: CETR: Aggressive Tax Avoidance measure for firm i in year t; $BBGENDV_{it}$: Board Gender Diversity for firm `i` in year `t`; $BIG4_{it}$: Audit Quality (1 if Big 4 auditor, 0 otherwise) for firm i in year t; $FSIZE_{it}$: Firm Size (Log of Total Assets) for firm i in year t; $PROFIT_{it}$: Profitability (ROA) for firm i in year t; LEV_{it}: Leverage (Debt-to-Assets Ratio) for firm i in year t; α_0: Constant term; β1 - β7: Coefficients for the independent, moderator, and control variables; ε_{it}: Error term for firm i in year t.

Full Model (Including Moderation Effects): To test the moderating effect of Audit Quality (BIG4) on the relationship between each board characteristic and Tax Avoidance, interaction terms are added:

$CETR_{it} = \alpha 0 + \beta_1 BGENDV_{it} + \beta_2 BIG4_{it} + \beta_3 (BGENDVBIG4)_{it} + \beta_4 FSIZE_{it} + \beta_5 PROFIT_{it} + \beta_6 LEV_{it} + \varepsilon_{it}$; Where: $BGENDVBIG4_{it}$: Interaction term between Board Gender Diversity and Big4 Audit; β_3 : Coefficients capturing the moderating effect of Big4 Audit on the relationship between the board gender diversity and Aggressive Tax Avoidance. A statistically significant coefficient (β_3) indicates that the relationship between that specific board characteristic (BGENDV) and CETR depends on the level of Audit Quality (BIG4). The sign and magnitude reveal the nature of the moderation.

Techniques of Data Analysis

The empirical analysis will utilize a Panel Data Regression framework. To determine the appropriate model specification, the choice between the Fixed Effects (FE) and Random Effects (RE) estimators will be guided by the Hausman Specification Test (Hausman, 1978). The Fixed Effects model, which controls for all time-invariant characteristics of firms by demeaning the data, is preferred if the unique errors are correlated with the regressors, as it provides consistent estimates under this condition.

Conversely, the Random Effects model, which is more efficient if its key assumption holds, is selected when the unique errors are uncorrelated with the regressors, as it utilizes both within-entity and between-entity variation. The decision rule is straightforward: if the Hausman test rejects the null hypothesis that the RE model is consistent and efficient, the FE model is chosen; otherwise, the RE model is retained. Furthermore, given the potential for heteroskedasticity and autocorrelation in panel data, the model will employ Panel-Corrected Standard Errors (PCSE) (Beck & Katz, 1995) to ensure robust statistical inference and produce reliable standard errors that are resilient to these common complications in firm-level data.

Variable Definitions, Measurements, and Sources

The table below details the operationalization of all variables in the study.

Table 1
Variables Definitions, Measurements, and Sources

Variable Category	Variable Name	Symbol	Measurement	Definition	Data Source(s)
Dependent	Aggressive Tax Avoidance (Cash ETR)	CETR	Cash Effective Tax Rate (CETR): Cash Taxes Paid / Pre-tax Accountin Income. Lower CETR indicates higher ta avoidance. Winsorized at 0 and statutory rate (30%).	The extent to which a firm's cash tax payment deviate fron the statutory tax burden.	Annual Financial Statements (Cash Flow Statement, Notes: Cash Paid for Income Tax).
Independen	Board Gender Diversity	BGENDV	Number of female directors/Total number of Board Size.	The proportion of female directors serving on the Board o Directors.	Annual Corporate Governance Reports; Board Listings in Annual Reports.
Moderator	Audit Quality	BIG4	Binary: 1 if the firm's auditor is Deloitte, PwC, EY, or KPMG (or their legally distinct Nigerian member firms) in year t; 0 otherwise.	Engagemen of a high-quality external auditor, proxied by affiliation with a Big 4 network.	Audit Report (Signed by the audit firm) within the Annual Financial Statements.
Control	Firm Size	FSIZE	Natural Logarithm of Total Assets (Log (Total Assets)).	The scale of the firm's operations, proxied by total assets.	Annual Financial Statements (Statement of Financial Position/Balanc Sheet).
Control	Profitability	PROFIT	Return on Assets (ROA): Net Income / Total Assets. Pre-tax ROA will be used as a	The firm's ability to generate profits from its assets.	Annual Financial Statements (Net Income from Income Statement;

			control in robustness checks.		Total Assets from Balance Sheet).
Control	Leverage	LEV	Debt-to-Assets Ratio: Total Debt / Total Assets. Total Debt = Interest-bearing liabilities (Short-term Borrowings + Long-term Borrowings).	The extent to which the firm uses debt financing.	Annual Financial Statements (Statement of Financial Position/ Balance Sheet).

Source: STATA OUTPUT (2025)

Methods of Data Collection

The study used secondary data contained in the annual financial statements of the thirty-three listed financial services firms for the period 2006- 2022. Relevant information on the dependent and independent variables of the study was extracted from the financial statements. The panel dataset comprised 561 observations which were subjected to different tests for analysis.

Diagnosis Test

In analyzing the relationship between the dependent and independent variables, longitudinal panel data approach was used. Multiple regression analysis was used as a tool of analysis. Fixed and Random Effects regression model were estimated using Stata 14.2 statistical software. Various diagnostic and robustness tests such as Multicollinearity, Heteroskedasticity, and Hausman specification among others were conducted.

Multicollinearity implies the existence of a linear relationship between two or more explanatory variables. Multicollinearity test was conducted to check whether there are strong correlations between independent variables which will mislead the result of the study. Heteroskedasticity test was conducted to check whether the variability of error terms is constant or not. The presence of heteroskedasticity signifies that the variation of the residuals or error term is not constant which would affect inferences in respect of beta coefficient, coefficient of determination (R^2) and F-statistics of the study. Where the chi square is large it indicates that heteroskedasticity is present.

Considering the panel attributes of the study, Fixed and Random Effect test were carried out. Hausman specification test was carried out in order to decide the most effective model to choose between the two models. The test is designed to detect violation of the random effects modeling assumption that the predictor (independent) variables are orthogonal to the unit effects. If there is no correlation between the independent variables and the unit effects, then estimates of β in the Fixed effects model should be similar to estimates of β in the Random effects model.

Under the null hypothesis of orthogonality, H is distributed chi-square with degrees of freedom equal to the number of regressors in the model. A finding that $p < 0.05$ is taken as evidence that, at conventional levels of significance, the two models are different enough to reject the null hypothesis, and hence to reject the random effects model in favor of the fixed effects model. If the Hausman test does not indicate a significant difference ($P> 0.05$), then, it does not necessarily follow that the random

effects estimator is free from bias, and therefore to be preferred over the fixed effects estimator.

4. Results and Discussion

This section describes the data presentation, analysis and interpretation. The section consists of descriptive analysis, diagnostic tests, regression analyses, hypotheses testing and discussion of findings. Table 2 presents the results of descriptive statistics showing the observations, the mean, standard deviation, minimum mean and maximum mean.

Table 2

Descriptive Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
CETR	561	0.17	0.56	0.05	.29
BDGDIV	561	0.18	0.18	0	0.6
AQ	561	0.76	0.43	0	1
FRMSZ	561	8.00	1.17	6.24	10.14
PRTY	561	0.48	0.04	0.07	0.61
LEVR	561	2.11	4.69	0.0045	29.87

Source: STATA OUTPUT (2025)

From Table 2, the number of observations is 561, which was derived from the product of the number of firms (33) and the number of years (17). Furthermore, TAXAVD (Tax avoidance) averages .561 with a standard deviation of 1.251, which is higher than the mean suggesting that there is a high level of volatility in tax avoidance, which provides the basis to be treated in this study as the dependent variable. In addition, the minimum mean is -.1505 and the maximum mean is 11.3306.

Board Size (BDSZ) approximately averages 10 members with a standard deviation of 2 members and a minimum mean of 6 members and a maximum mean of 16 members. Furthermore, BDIND (board independence) averages 62%, with a standard deviation approximately 11% and a minimum mean of 33% and maximum mean of 92%.

Board Gender Diversity (BDGDIV) shows an average of .17% with a standard deviation of approximately 18%, minimum of 0 and maximum .6 members. Similarly, AQBDSZ (AQ * BDSZ) revealed an average number of 8 with a standard deviation of 5 members and minimum and maximum number 0 and 16 respectively. Likewise, AQBDIND (AQ * BDIND) averages total of 48 members with standard deviation of 29 members with minimum and maximum number 0 and .92 respectively. Same also, AQBDGDIV (AQ * BDGDIV) approximately average .14, with a standard deviation of .18 while we have a minimum and maximum mean of 0 and .6 respectively percent respectively.

As for our control variables, FRMSZ averages 8% with standard deviation of 1%, while the minimum and the maximum is 6% and 10% respectively. PRTY averages 48%, standard deviation is 3% while minimum and maximum is 6% and 60% respectively. LEVR averages 2%, its standard deviation is 4% while the minimum and the maximum is 0.004% and 29%.

Table 3

Cameron & Trivedi's decomposition of IM-test

Source	chi2	Df	P
Model 1	83.92	19	0.0000
Model 2	84.82	23	0.0000

Source: STATA OUTPUT (2025)

From Table 3, the p-value of Model 1 is .0000, which is significant, that is, it is less than .05, suggesting that the data have heteroskedasticity. Also, the p-value of Model 2 is .0000, which is significant, suggesting that the data have heteroskedasticity.

Table 4

Results of Multicollinearity Test

	Mean VIF
Model 1	1.01
Model 2	2.66

Source: **STATA OUTPUT (2025)**

From the results in Table 4, both models show no presence of Multicollinearity because the mean variance inflation factors (VIF) are less than 10 (Vittinghoff, 2005).

Table 5

Results of Panel Effects Tests

	Chi^2	p-Value
Model 1	9.46	.0922
Model 2	9.27	.1527

Source: STATA 14.2 (See Appendix A2)

The results in Table 5 shows that there are no panel effects in both models. Based on the results in Table 6, the appropriate analytical technique for Model 1 and Model 2 is Random Effects Model (REM).

Table 6

Results of Robust Regression (Without Moderation)

CETR	Coef.	t-val	p-val.	Sig
BDGDIV	.1187	10.33	0.000	**
BIG4	-.0063	-1.19	0.234	
FRMSZ	-.0044	-2.41	0.016	**
PRTY	-.1216	-1.54	0.123	
LEVR	-.0005	-0.84	0.401	
Constant	.2490	6.03	0.000	
	Number of obs	561		
	F (7,553)	23.02		
	Prob > F	0.0000		
	R-squared	0.1610		
	Root MSE	.05298		

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

Source: STATA OUTPUT (2025)

Similarly, the results of robust regression for Model 2 are reported in Table 7

Table 7

Results of Robust Regression (With Moderation)

CETR	Coef.	t-val.	p-val.	Sig
BGENDV	.0673	2.46	0.014	**
BIG4	-.0168	-2.53	0.012	**
BIG4GENDIV	.0656	2.15	0.032.	**
FSIZE	-.0040	-2.18	0.029	**
PROFIT	-.1038	-1.34	0.182.	
LEV	-.0004	-0.63	0.528	
Constant	.2447	6.03	0.000	
	Number of obs		561	
	F (6,554)		21.55	
	Prob > F		0.000	
	R-Squared		0.1678	
	Root MSE		.05281	

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

Source: STATA OUTPUT (2025)

Interpretation

From Tables 6 and 7, the prob > F in the two models were found to be significant, meaning that the results can be used to explain the models because, their p-values are significant. In Table 6, board gender diversity and firm size were found to be significant, while audit quality, profitability, and leverage are found not to be significant.

Also, as shown in Table 7, board gender diversity, BIG4, audit quality moderator, and firm size were found to be significant when the variables were moderated by audit quality dummy, but profitability and leverage are found not to be significant when moderated by audit quality dummy.

Discussion of Findings

H_{01}: Board gender diversity has no significant effect on corporate tax avoidance of listed financial services firms in Nigeria.

Using Regression output to test the above-mentioned hypothesis as shown in Table 6 (using model 1), it was found that the coefficient values of board gender diversity is 0.1188 while the P-value is 0.000 respectively. Therefore, our study will reject the null hypothesis for board gender diversity and conclude that board gender diversity has a positive and highly significant effect on tax avoidance practices by listed financial services firms in Nigeria. This is supported by work of Barua and Davidson (2016).

Also, as shown in Table 7 (using Model 2), it was found that the coefficient values of board gender diversity is 0.0674 while the P-value is 0.014 respectively. Therefore, our study will reject the null hypothesis for board gender diversity and conclude that board gender diversity has a positive and significant effect on tax avoidance practices by listed financial services firms in Nigeria. This is also supported Barua and Davidson (2016).

H_{02}: Audit quality does not have significant effect on tax avoidance practices among listed financial services firms in Nigeria.

Using Regression output to test the above-mentioned hypothesis as shown in Table 6, it was found that the coefficient of value of audit quality is -0.0064 and P-value is 0.234. The null hypothesis was accepted and it was concluded that audit quality does not have any significant effect on tax avoidance practices of listed financial services firms in Nigeria. This supports the work of Hanlon et al. (2012).

From Table 7, it was also found that the coefficient of value of audit quality is -0.0168 and P-value is 0.012. The null hypothesis was rejected and it was concluded that audit quality truly has significant effect on tax avoidance practices of listed financial services firms in Nigeria. This supports the work of Badertscher et al. (2013).

H_{03}: Audit Quality does not significantly moderate the effect of board board gender diversity on tax avoidance practices among listed financial services firms in Nigeria.

From Table 7, board gender diversity moderated by audit quality (BIG4GENDIV) has the following coefficient value and P-value: 0.0656 and 0.032 respectively. The null hypothesis is rejected for board gender diversity and it was concluded that moderated value of board gender diversity is positive and has significant effect on tax avoidance practices of listed financial services firms in Nigeria at 5% significant level.

For board gender diversity, the study concludes that audit quality positively and significantly moderates the effect of board gender diversity on aggressive tax avoidance practices among listed financial services firms in Nigeria. This supported the work of Barua & Davidson (2016). Therefore, listed financial services firms in Nigeria should increase the number of their female directors so as to reduce aggressive tax avoidance practices among them.

5. Conclusion and Recommendations

Based on the empirical findings from testing the stated hypotheses, this study concludes the following for listed financial services firms in Nigeria:

(i) In direct contrast to the theoretical premise, board gender diversity (BGD) has a positive and significant effect on aggressive tax avoidance. This leads to the rejection of Hypothesis One (H_{01}). The finding indicates that, in the Nigerian context, a higher proportion of female directors is associated with lower Cash Effective Tax Rates (CETR), meaning more aggressive tax avoidance. This suggests that the presumed risk-averse and ethical influence of female directors may be subdued or overridden by other contextual factors, such as assimilation into the prevailing corporate culture or the complex nature of financial services taxation.

(ii) The effect of audit quality (proxied by Big 4 affiliation) is not straightforward but is contingent on its role. Hypothesis Two (H_{02}) is accepted in the base model but rejected in the moderated model. This indicates that while audit quality alone does not have a direct significant effect on tax avoidance, its importance emerges when interacting with governance mechanisms. Specifically, it acts as a significant moderator.

(iii) Audit quality significantly and positively moderates the relationship between board gender diversity and tax avoidance. Hypothesis Three (H_{03}) is rejected. The significant interaction term reveals that high-quality audits strengthen the existing relationship between BGD and tax avoidance. In this

case, it amplifies the tax-aggressive trend associated with diverse boards, possibly by providing the assurance and sophisticated structuring that makes such strategies more feasible and less likely to be challenged.

(iv) Firm-specific characteristics matter. Among the control variables, firm size consistently showed a significant negative relationship with CETR, confirming that larger firms in the financial services sector engage in more aggressive tax avoidance.

While the study concludes that the dynamics of corporate governance and tax avoidance in Nigeria's financial sector are complex, the influence of internal governance (BGD) runs counter to conventional theory, and the role of external governance (audit quality) is not direct but conditional, serving to enable and intensify the relationship between board composition and tax strategy. Therefore, this study offers the following specific, evidence-based recommendations:

(i) For Regulatory Bodies (CBN, SEC, NGX, FIRS): Re-evaluate Diversity Policies: Regulators should move beyond mandating simple numerical targets for gender diversity. Policies should be complemented with mandatory training and awareness programs for all directors (male and female) on fiduciary duties, ethical decision-making, and the long-term reputational and financial risks of aggressive tax avoidance. In enhancing auditor scrutiny and given the moderating role of audit quality, the FIRS and SEC should strengthen their scrutiny of the tax opinions and services provided by all audit firms, including the Big 4, especially for large financial institutions. Regulatory reviews should specifically assess whether audit practices facilitate overly aggressive tax positions.

(ii) For Corporate Boards and Management of Financial Services Firms: Foster Substantive Governance over Tokenism: Firms should focus on achieving substantive diversity by ensuring female directors are fully integrated into key committees like the Audit and Risk Management committees. The goal should be to harness diverse perspectives for robust debate on risk, including tax risk, rather than treating gender diversity as a compliance checkbox. Nevertheless, to strengthen internal controls on tax strategy, boards should establish a clear tax governance framework that requires explicit board-level approval for complex tax strategies, ensuring they align with the firm's stated risk appetite and corporate social responsibility values, not just technical compliance.

(iii) For Auditing Firms (Big 4 and others) and Reinforcing Ethical Judgment in Tax Advisory: Audit firms must rigorously uphold the principles of professional skepticism and public interest in their tax advisory services. There should be a clear internal separation and ethical firewall between audit and non-audit services to prevent the audit from being compromised by lucrative tax consulting work that may encourage aggressiveness.

(iv) Targeted Oversight for Large Firms and Implementing Differentiated Regulation: Since firm size is a significant driver of tax avoidance, regulators should consider a differentiated supervisory approach. The FIRS and CBN should subject the largest financial services firms to more frequent and intensive tax audits and forensic reviews to deter and detect aggressive tax practices effectively.

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