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Do More Diligent Boards Engage in More Tax Planning? Evidence from the Nigerian Agricultural Sector

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Abstract
Low meeting frequencies, and poor attendance to board meetings are major corporate governance weaknesses that make it difficult or even impossible for firm directors to exert checked influence over tax-related decisions made by the management. This problem often paves room for the adoption of questionably aggressive or opaque tax strategies that threaten not just the long-term sustainability of the firm but also investor trust. Hence, this study examined whether more diligent boards engage in more tax planning using the Nigerian Agricultural Sector as the source of evidence. Board diligence was measured using number of meetings while tax planning was measured using a binary classification based on the effective tax rate, coded as 1 if ETR is less than 30% (tax avoidance) and 0 if Effective Tax rate is 30% or more. Ex-post facto research design was adopted. The population and sample size were made up of five listed agricultural firms in Nigeria. Secondary data were collected from the annual repost of the firms over ten years, 2015-2024. In addition to the descriptive analysis carried out, probit model was used to test the hypothesis. The finding revealed that more diligent boards significantly reduce the likelihood of tax planning among listed agricultural firms in Nigeria ($\beta = -0.4774$; $p = 0.0006$). In conclusion, firms with more engaged boards may be less likely to exploit tax loopholes, contributing to a more ethical and responsible

corporate culture. The study recommends that regulatory bodies such as the Securities and Exchange Commission (SEC) and the Nigerian Exchange Group should create and enforce policies that mandate a minimum frequency of board meetings for listed agricultural firms. These policies would help ensure greater board diligence and could mitigate aggressive tax planning, aligning the firms' financial behavior with broader national tax compliance goals.

Keywords: *Board Diligence, Tax Planning, Binary Probit Model, Nigerian Agricultural Sector*

1.0 Introduction

Agriculture has historically been a cornerstone of Nigeria's economy, serving as a significant source of employment, food security, and raw materials for agro-based industries. Despite the country's dependence on crude oil revenues, the agricultural sector continues to play a crucial role in Nigeria's economic diversification agenda, particularly under the government's renewed efforts to boost non-oil sectors (Dominic & Wlliams, 2025). Within this context, several agricultural firms have emerged and grown in sophistication, moving from informal operations to formal listings on the Nigerian Exchange Group (NGX). As these firms grow and become subject to regulatory scrutiny and shareholder accountability, corporate governance practices—particularly board effectiveness—are increasingly being recognized as essential drivers of organizational sustainability and financial prudence. Among the critical areas affected by corporate governance is the domain of tax planning, which encompasses strategies firms use to minimize tax liabilities within the boundaries of legal frameworks (Nwaiwu, 2024).

The Nigerian tax environment is complex, with multiple layers of tax obligations at federal, state, and local levels (Olawuyi et al., 2025). This complexity, coupled with historically low levels of tax compliance and a weak enforcement regime, has often led firms to engage in aggressive or opaque tax planning practices (Jackson et al., 2023). For listed firms, particularly those in sectors such as agriculture that benefit from various tax incentives, effective tax planning becomes not just a matter of financial efficiency but also of legal compliance and corporate responsibility (Nwaiwu, 2024). In this light, the role of a company's board of directors becomes crucial. The board is tasked with overseeing management and ensuring that strategic decisions align with long-term shareholder value while complying with regulatory requirements (Islam et al., 2025). Board diligence—the attentiveness, frequency of meetings, preparation for deliberations, and depth of oversight exercised by board members—is a key element of board effectiveness (Emiaso & Okafor, 2023). It reflects how seriously the board takes its fiduciary duties, including oversight over sensitive areas such as financial disclosures, risk management, and tax planning.

In today's global and fast-evolving business environment, effective board diligence and robust tax planning strategies are increasingly viewed as pillars of sustainable corporate governance. Companies are expected not only to achieve profitability but also to operate transparently, ethically, and in compliance with tax laws. Boards of directors have evolved from ceremonial bodies to active participants in strategic decision-making, tasked with ensuring that the company is not exposed to undue risks—financial, reputational, or regulatory (Nwafor & Nworie, 2025). Makka and Suleiman (2024) averred that tax planning, though legal, can range from conservative to aggressive strategies, and without effective oversight, firms may cross into risky or unethical territory. Particularly in publicly listed firms where investor confidence hinges on transparency and risk management, the board's role in scrutinizing tax policies and outcomes cannot be overemphasized. Effective board diligence ensures that tax strategies are not only efficient but also aligned with the company's values, and stakeholder expectations (Uniamikogbo, 2024). With increasing public scrutiny on tax avoidance and international efforts to curb base erosion and profit shifting (BEPS), firms must navigate tax planning with both prudence and precision. Board diligence, in this regard, serves as a safeguard against potential legal liabilities and reputational harm, positioning the firm as both profitable and principled.

Specifically, the relationship between board diligence and tax planning is gaining prominence in governance and financial literature (Islam et al., 2025; Onukelobi et al., 2024; Okpala & Omaliko, 2022). Diligent boards are more likely to engage deeply with financial disclosures, question aggressive tax strategies, and demand accountability from executive management. They tend to hold more frequent meetings, thoroughly review agenda materials, and include members with the expertise to interrogate complex financial decisions, including tax matters. Such boards can impose checks on overly aggressive tax planning that could attract regulatory sanctions or public criticism. Conversely, boards that meet infrequently or operate passively may provide a permissive environment for management to adopt high-risk tax positions. Empirical research has shown that firms with active and independent boards tend to adopt more conservative tax strategies, reducing the likelihood of audit adjustments or tax penalties (Onukelobi et al., 2024; Umar et al., 2024; Peter et al., 2020). In Nigeria, where governance practices are still maturing and regulatory enforcement is often inconsistent (Kofarbai & Yauri, 2021), the board's vigilance can make a significant difference in ensuring tax compliance and responsible corporate citizenship. This is particularly relevant for agricultural firms, many of which benefit from sector-specific tax incentives. Without adequate board oversight, such incentives can be misapplied or exploited, leading to reputational damage and regulatory backlash.

Furthermore, in a country like Nigeria where corporate governance enforcement is still developing and institutional weaknesses abound, the effectiveness of board structures becomes even more essential. Agricultural firms, despite their importance, often operate in environments marked by limited transparency, inadequate regulatory oversight, and infrastructural deficits (Ikuemonisan, 2024). This setting raises concerns about how well boards of such firms function and the degree to which they can serve as effective monitors of tax strategy and financial reporting. However, despite regulatory frameworks mandating board activity and financial disclosures, a review of annual reports of listed agricultural firms in Nigeria showed that many boards are characterized by low meeting frequencies, and poor attendance. These governance weaknesses disallow management from exerting unchecked influence over tax-related decisions, leading to the adoption of aggressive or opaque tax strategies. In the agricultural sector, which enjoys multiple tax exemptions and incentives (Olubunmi et al., 2025), the lack of strong board oversight increases the risk of misuse or abuse of these provisions. Moreover, insufficient board diligence may result in the underreporting of income, manipulation of taxable figures, or other non-compliant tax practices that go unnoticed due to ineffective governance structures.

For individual firms, poor board diligence can lead to regulatory sanctions, tax audits, legal disputes, and reputational damage, all of which threaten long-term sustainability and investor trust. On a broader scale, when numerous firms engage in questionable tax practices due to lax board oversight, the government faces a significant loss in potential tax revenue (Abdulkadir & Aliyu, 2024)—particularly damaging in a country like Nigeria where tax-to-GDP ratios remain critically low. This undermines national development goals, weakens public trust in corporate institutions, and perpetuates a cycle of poor fiscal accountability. Thus, there is an urgent need to investigate the extent to which board diligence impacts tax planning practices in listed agricultural firms, in order to inform governance reforms and improve tax compliance outcomes in Nigeria. Hence, this study examined whether more diligent boards engage in more tax planning using the Nigerian Agricultural Sector as the source of evidence.

2.0 Literature Review

2.1 Conceptual Clarification of Board Diligence and Tax Planning

In corporate governance literature, board diligence refers to the degree of attentiveness, oversight, and commitment demonstrated by a company's board of directors in executing its fiduciary responsibilities (Emiaso & Okafor, 2023). While this concept encompasses various qualitative dimensions such as preparedness and engagement during deliberations, for the purpose of this study, board diligence is operationally defined as the frequency of board meetings held annually. This quantitative proxy is widely used in empirical governance research to measure board activeness and oversight intensity (Islam et al., 2025; Yahaya, 2023; Ebimobowei, 2022; Kang'ara, 2019). The rationale is that the more frequently a board meets, the more opportunities it has to review managerial actions, monitor financial practices, and respond proactively to emerging risks, including issues related to taxation and compliance (Okpala & Omaliko, 2022). A board that meets more often is assumed to be more informed, more engaged, and better positioned to question or approve complex managerial decisions, including those concerning tax planning strategies.

Board diligence is particularly critical in the Nigerian corporate environment, where weak enforcement of governance regulations often means that internal controls must compensate for systemic deficiencies. Listed firms on the Nigerian Exchange Group (NGX) are expected to disclose the number of board meetings held annually in their financial statements, offering a transparent means of assessing diligence. In theory, boards that meet frequently are more likely to understand the company's financial position, scrutinize tax policies, and detect any aggressive or non-compliant practices that could expose the firm to future risks (Sanyaolu et al., 2020). Thus, the frequency of board meetings serves as a meaningful indicator of how seriously a board approaches its governance duties, particularly those tied to fiscal accountability (Onukelobi et al., 2024).

On the other hand, tax planning refers to the strategies employed by firms to reduce their tax liabilities using legal and regulatory provisions (Dang, 2025). It is an integral part of financial management that allows businesses to optimize their after-tax earnings, thus enhancing shareholder value. In this study, tax planning is conceptualized as the practice of paying below the statutory corporate income tax rate of 30% in Nigeria through legal means. The Nigerian tax system, governed by the Federal Inland Revenue Service (FIRS), imposes a 30% corporate income tax on company profits (Otuya & Omoye, 2021), although certain sectors—including agriculture—are eligible for tax holidays, exemptions, or rebates (Olubunmi et al., 2025). Tax planning becomes problematic when firms exploit loopholes or manipulate financial statements to artificially reduce their tax obligations, thereby crossing the line from acceptable tax minimization into avoidance or even evasion (Ordower, 2024).

In Nigeria's context, effective tax planning is often constrained by regulatory ambiguity, weak institutional enforcement, and a pervasive culture of informality, all of which create an enabling environment for aggressive tax behavior (Eragbhe & Igbinoba, 2021). For listed firms, however, tax planning must balance cost-saving goals with transparency and compliance, particularly as public companies are subject to scrutiny from shareholders, regulators, and civil society. The agricultural sector in Nigeria is especially sensitive in this regard. Due to its strategic importance in achieving food security and economic diversification, it enjoys significant tax incentives under the Companies Income Tax Act and other investment-promoting laws (Olubunmi et al., 2025). Firms in this sector may therefore appear to have lower effective tax rates as a function of legitimate exemptions. However, when a firm's effective tax rate (ETR)—calculated as tax expense divided by pre-tax earnings—consistently falls below the statutory rate of 30% without clear justification, it raises questions about the aggressiveness of its tax planning strategies.

This study adopts the position that an effective tax rate below 30% signals the use of tax planning strategies, which may range from basic legal optimization to potentially aggressive schemes. While not inherently illegal (Oladejo, 2021), such behavior must be scrutinized in light of corporate governance practices, particularly board diligence. The expectation is that firms with more diligent boards (i.e., boards that meet more frequently) are less likely to engage in risky tax behavior and more likely to ensure that tax planning is conducted ethically and within the bounds of applicable laws (Umar et al., 2024). Conversely, less diligent boards may lack the oversight capacity to question management's tax decisions, creating room for unchecked tax avoidance practices.

The interaction between board diligence and tax planning also raises critical questions about accountability, transparency, and long-term corporate sustainability. Frequent board meetings can foster robust discussions around tax disclosures, interpretations of tax laws, and the ethical implications of certain strategies. They can also facilitate better communication between internal auditors, tax consultants, and executive management. In contrast, boards that rarely meet may be unaware of or indifferent to the financial engineering occurring under their watch, thereby abdicating one of their core responsibilities. This is particularly troubling in Nigeria, where the loss of government revenue due to corporate tax avoidance exacerbates fiscal deficits and undermines public services (Abdulkadir & Aliyu, 2024).

2.2 Theoretical Framework and Development of Research Hypothesis

Stewardship Theory originated as a response to the assumptions of Agency Theory (Caers et al., 2006) and was formally developed in the 1990s, most notably by Donaldson and Davis (1991). While Agency Theory views managers as self-serving agents who require close monitoring, Stewardship Theory presents a contrasting view, positing that managers are stewards whose interests align with those of the organization and its stakeholders. The theory emerged from organizational behavior and psychology literature, which suggested that, under certain conditions, managers are intrinsically motivated to act in the best interests of their organizations, thereby reducing the need for excessive control or monitoring (Donaldson & Davis, 1991).

The core postulation of Stewardship Theory is that organizational actors, including executives and board members, are trustworthy, collectivist-oriented, and committed to the long-term success of the organization (Subramanian, 2018). It suggests that when managers perceive themselves as stewards, they will act with integrity, prioritize organizational objectives over personal gain, and maintain transparency in decision-making processes. Rather than viewing oversight as a mechanism of control, the theory emphasizes trust, empowerment, and collaboration between the board and management. In this context, the board's role is not necessarily to constrain behavior but to support and enable ethical and performance-driven actions (Keay, 2017). Board diligence, therefore, becomes a manifestation of shared responsibility and collective commitment to governance excellence.

Stewardship Theory is particularly relevant to this study as it provides an alternative lens through which to examine the relationship between board diligence (measured by frequency of meetings) and tax planning in listed agricultural firms in Nigeria. Under this theory, a diligent board—one that meets frequently—is not just fulfilling a compliance requirement but is actively engaged in stewarding the firm's long-term interests, including responsible tax behavior. In sectors like agriculture, where firms often enjoy government tax incentives, a stewardship-oriented board ensures these privileges are used ethically and legally, avoiding reputational risks and regulatory violations. Rather than assuming adversarial relations between the board and management, this theory supports the idea that frequent board meetings foster collaboration, encourage responsible financial practices, and reflect a collective commitment to transparent, legal tax planning. As such, Stewardship Theory helps explain how board diligence can lead to responsible tax planning not merely through control, but through shared values and a long-term organizational mindset. For this reason, we hypothesis that:

H0: *More diligent boards do not significantly engage in more tax planning among listed agricultural firms in Nigeria.*

2.3 Empirical Review

Although the empirical evidence provides both support and counterpoints for a direct relationship between board diligence and tax planning, the findings are inconclusive and context-dependent, underscoring the need for further research—especially within the underexplored agricultural sector in Nigeria. Islam et al. (2025) reported a negative and significant relationship in Bangladesh, suggesting that frequent board meetings may promote aggressive tax planning and lower the effective tax rate. Similar findings were echoed by Ebimobowei (2022) and Kang'ara (2019), both of whom observed a negative but statistically insignificant relationship in Nigerian pharmaceutical firms and Kenyan commercial/service firms, respectively. These results suggest that while frequent board meetings might correlate with more tax planning, the statistical insignificance tempers the generalizability of this assertion. In contrast, Yahaya (2023) found no significant relationship between board meeting frequency and tax avoidance in Nigerian banks, highlighting that in highly regulated financial sectors, board diligence might not influence tax strategies at all.

On the other hand, several studies point toward a positive association between board diligence and effective tax rate, implying reduced tax avoidance. Umar et al. (2024) found a positive and significant relationship in Nigerian manufacturing firms, suggesting that more engaged boards discourage tax avoidance. This finding aligns with Okpala and Omaliko (2022), who reported that board diligence significantly increases the effective tax rate in tax-aggressive firms across sectors like ICT, healthcare, and oil and gas. Similarly, Makka and Suleiman (2024) observed that board independence and gender diversity positively affect tax compliance in consumer goods firms, reinforcing the idea that strong governance mechanisms—especially board vigilance—can constrain aggressive tax practices. These studies strengthen the argument that active, diverse, and independent boards contribute to ethical financial decision-making.

However, other studies introduce nuance and inconsistency. Peter et al. (2020) and Onukelobi et al. (2024) found positive but statistically insignificant effects of board meetings on tax planning in Nigerian non-financial firms, indicating that the presence of frequent meetings alone does not necessarily lead to more effective tax governance. Additionally, Uniamikogbo (2024) emphasized that the overall structure of corporate governance, not just meeting frequency, shapes firms' tax planning behavior. This holistic view suggests that board diligence, while relevant, is one component of a broader governance ecosystem.

2.4 Gap in Literature

Despite the growing interest in the relationship between corporate governance and tax behavior, the effect of board diligence on tax planning has largely been examined in non-agricultural sectors, leaving a significant gap in sector-specific research. Scholars such as Islam et al. (2025), Makka and Suleiman (2024), Uniamikogbo (2024), Onukelobi et al. (2024), Umar et al. (2024), Yahaya (2023), Okpala and Omaliko (2022), Ebimobowei (2022), Peter et al. (2020), and Kang'ara (2019) have all focused on sectors such as manufacturing, consumer goods, pharmaceuticals, banking, and ICT, while overlooking the agricultural sector. This study addressed that oversight by concentrating specifically on listed agricultural firms in Nigeria. Additionally, while previous studies commonly employed effective tax rate as a continuous measure of tax avoidance, this study introduces a novel binary classification of tax planning—categorizing firms as tax avoiding (1) if ETR is less than 30% or non-avoiding (0) otherwise. Finally, unlike prior works that relied on regression techniques like OLS, panel EGLS, and correlation models, this research uniquely applies a Probit Model to test the hypothesis, offering a more suitable approach for analyzing dichotomous tax planning behavior. These distinctions establish clear methodological and contextual gaps in the literature that this study aims to fill.

3.0 Methods

This study adopted an ex-post facto research design, which is appropriate for analyzing the relationship between variables using historical data without manipulating any of them (Nworie et al., 2022; Nwafor & Nworie, 2025). Ex-post facto designs are often used in corporate governance and financial research because they enable the examination of naturally occurring variables over time. In this study, the design allows the researchers to assess the influence of board diligence—measured by the frequency of board meetings—on the tax planning practices of firms, by analyzing past firm-level data. Since neither the number of board meetings nor the firms' tax outcomes can be influenced by the researchers, this design offers the most objective approach to evaluating causality in a natural setting.

The population of the study comprised all listed agricultural firms on the Nigerian Exchange Group (NGX). As of the most recent classification, there are five (5) agricultural firms listed on the NGX, namely:

1. Ellah Lakes
2. FTN Cocoa Processor
3. Livestock Feeds
4. Okomu Oil Palm
5. Presco

Given the small and manageable size of the population, the study adopted a census approach, meaning that all five firms were included as the sample size. This ensured full coverage of the sector and enhances the reliability of the findings, as there is no sampling error. Using the entire population of listed agricultural firms increased the internal validity of the results and provided a comprehensive perspective on governance and tax behavior in the industry.

The method of data collection for the study was the secondary method, specifically through annual reports and financial statements of the selected firms. These reports are publicly available documents that provide detailed information on board activities, tax expenses, and pre-tax profits. The data covered a ten-year period from 2015 to 2024, which allows for the observation of trends over time and reduces the effects of short-term anomalies. Relevant sections of the reports, such as corporate governance disclosures, directors' reports, and income statements, were examined to extract variables of interest. The data collection process involved downloading the reports from official company websites and the NGX portal, followed by manual extraction of the necessary variables.

For data analysis, the study employed both descriptive statistics and inferential techniques. Descriptive statistics, including means, and standard deviations, were used to summarize the data and provide a general overview of the trends in board diligence and tax planning across firms and years. To test the hypotheses and determine the influence of board diligence on tax planning, the study used a Binary Probit regression model. This model is appropriate because the dependent variable—tax planning—is binary: coded as 1 if a firm's effective tax rate (ETR) is below the statutory 30%, and 0 otherwise. The Binary Probit model estimated the probability that a firm engages in tax planning as a function of board diligence and control variables.

The Binary Probit model is specified as follows:

$$TPit = \beta 0 + \beta 1BDit + \epsilon it$$

Where:

TPit is the latent (unobserved) propensity of firm *i* in year *t* to engage in tax planning; TPit = 1 if ETR<30%, otherwise 0.
BDit = Board diligence, measured as number of board meetings.
ϵit = Error term assumed to follow a standard normal distribution.
This model was estimated using the statistical software called Eviews Version 10.
The operational measurement of variables is summarized in the table below:

Table 3.1 Operational Measurement of Variables

Variable	Description	Measurement	Expected Sign
Tax Planning (TP)	Whether a firm engages in tax planning	Dummy: 1 if ETR < 30%; 0 otherwise	Dependent Variable
Board Diligence (BD)	Activeness of the board in governance	Number of board meetings per year	Negative

Source: Researcher's Compilation (2025)

4.0 Findings

4.1 Descriptive Analysis

Table 4.1 Descriptive Analysis

	Tax Planning (1 = Avoided Tax; 0 = Did Not Avoid Tax)	ETR	Profit Before Tax (₦'000)	Tax Current (₦'000)	Number of Board Meetings
Mean	0.700000	11.97162	8106271.	2412983.	3.860000
Median	1.000000	4.227914	262052.5	10606.50	4.000000
Maximum	1.000000	66.15874	95503775	32045120	8.000000
Minimum	0.000000	-131.9630	-10650347	-14452033	1.000000
Std. Dev.	0.462910	27.00547	18149540	6275741.	1.862739
Skewness	-0.872872	-2.794381	2.912129	2.281125	0.244149
Kurtosis	1.761905	17.35546	12.83512	12.52826	2.037327
Jarque-Bera	9.542706	494.4031	272.1906	232.5040	2.427448
Probability	0.008469	0.000000	0.000000	0.000000	0.297089
Observations	50	50	50	50	50

Source: Eviews 10 Output (2025)

As shown in Table 4.1, the descriptive statistics for tax planning, which is a binary variable coded as 1 (tax avoided) and 0 (tax not avoided), show that the mean value is 0.70. This indicates that 70% of the listed agricultural firms in the sample engaged in tax avoidance, based on the criterion of having an effective tax rate (ETR) less than 30%. The median value is 1.00, confirming that the majority of firms in the dataset were classified as tax avoiders. The minimum and maximum values are 0 and 1, respectively, as expected for a binary variable. The standard deviation of 0.46 shows a relatively moderate dispersion from the mean. The negative skewness value (-0.87) suggests that the distribution leans toward the right, indicating more observations of tax avoidance (1). The kurtosis value of 1.76 is below the normal distribution benchmark of 3, implying a flatter distribution. The Jarque-Bera statistic is 9.54 with a probability value of 0.008, indicating that the distribution of the tax planning variable is not normally distributed at the 1% significance level.
The ETR variable shows a mean of 11.97%, suggesting that, on average, listed agricultural firms paid a relatively low proportion of their profits in taxes. The median ETR is 4.23%, which is substantially lower than the mean, indicating a right-skewed distribution. The minimum value of -131.96% suggests the presence of negative tax rates, likely due to tax credits or losses,

while the maximum ETR is 66.16%, showing some firms paid well above the nominal corporate tax rate. The high standard deviation of 27.01 reveals substantial variability in tax burdens across firms. The distribution is highly negatively skewed (-2.79), implying a concentration of values on the right side (higher ETRs are less common). The kurtosis value of 17.36 indicates a very peaked distribution with heavy tails. The Jarque-Bera statistic of 494.40 and the p-value of 0.000 confirm that the ETR data significantly deviate from normality. Profit before tax has a mean of ₦8.1 million, but the median is just ₦262,053, showing a large disparity between average and typical values. This suggests a positively skewed distribution where a few firms report extremely high profits, pulling the mean upward. The maximum reported profit is ₦95.5 million, while the minimum is -₦10.65 million, indicating that some firms recorded losses. The high standard deviation of ₦18.15 million points to large variability in profit performance. The skewness value of 2.91 confirms a strong right skew, and the kurtosis of 12.84 shows a highly leptokurtic distribution with extreme values. The Jarque-Bera test statistic of 272.19 with a probability of 0.000 indicates that the profit before tax variable is not normally distributed.

The mean current tax expense across the firms is ₦2.41 million, with a median of just ₦10,606.50, which again suggests the presence of extreme high values skewing the average upward. The maximum current tax expense reaches ₦32 million, while the minimum is -₦14.45 million, indicating that some firms possibly had tax refunds or adjustments. The standard deviation is high at ₦6.28 million, reflecting significant variation. The positive skewness of 2.28 and a kurtosis of 12.53 denote a distribution with a long right tail and sharp peak. The Jarque-Bera test confirms strong non-normality, with a statistic of 232.50 and a p-value of 0.000.

The number of board meetings held annually has a mean of 3.86 and a median of 4, suggesting that most agricultural firms hold about four meetings per year. The values range from a minimum of 1 to a maximum of 8 meetings. The standard deviation of 1.86 indicates moderate variation in board activity across firms. The skewness of 0.24 suggests a slight right-skewed distribution, and the kurtosis of 2.04 is close to the normal distribution value of 3, implying a relatively normal shape. The Jarque-Bera statistic of 2.43 with a p-value of 0.297 shows that the number of board meetings variable does not significantly deviate from normality at conventional levels.

4.2 Test of Hypothesis

Table 4.2 below shows the result of the regression analysis used in testing the hypotheses. The hypothesis tested is restated below thus:

H0: *More diligent boards do not significantly engage in more tax planning among listed agricultural firms in Nigeria.*

Table 4.2 Test of Hypothesis

Dependent Variable: Tax Planning (1 = Avoided Tax; 0 = Did Not Avoid Tax)
Method: ML - Binary Probit (Newton-Raphson / Marquardt steps)
Date: 02/04/25 Time: 00:49
Sample: 2015 2024
Included observations: 50
Convergence achieved after 4 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.

Number of Board Meetings	-0.477372	0.139515	-3.421667	0.0006
C	2.576183	0.676166	3.809986	0.0001

McFadden R-squared	0.256534	Mean dependent var	0.700000
S.D. dependent var	0.462910	S.E. of regression	0.406653
Akaike info criterion	0.988313	Sum squared resid	7.937593
Schwarz criterion	1.064794	Log likelihood	-22.70783
Hannan-Quinn criter.	1.017438	Deviance	45.41567
Restr. deviance	61.08643	Restr. log likelihood	-30.54322
LR statistic	15.67076	Avg. log likelihood	-0.454157
Prob(LR statistic)	0.000075		
Obs with Dep=0	15	Total obs	50
Obs with Dep=1	35		

Source: Eviews 10 Output (2025)

Table 4.2 presents the result of the binary probit regression model used to test the hypothesis regarding the effect of board diligence (proxied by the number of board meetings) on tax planning among listed agricultural firms in Nigeria. The model's validity is assessed using the McFadden R-squared and the LR statistic probability. The McFadden R-squared value of 0.2565 indicates a moderate explanatory power of the model, suggesting that approximately 25.7% of the variation in the likelihood of tax planning (tax avoidance = 1) can be explained by the number of board meetings. This is considered relatively good for binary choice models. Furthermore, the probability of the LR statistic is 0.000075, which is statistically significant at the 1% level. This means the model as a whole is valid and significantly better than a model with no predictors.

The constant term (C) in the model is 2.5762 (p = 0.0001), and it is statistically significant at the 5% level. In a probit model, the constant represents the baseline z-value (i.e., the inverse of the cumulative normal distribution) for a firm when the number of board meetings is zero. A significant positive constant suggests that, holding board diligence at zero, there is a high baseline probability of tax planning among the firms.

The main independent variable of interest, number of board meetings, has a coefficient of -0.4774 with a p-value of 0.0006, indicating a statistically significant effect on tax planning at the 5% level. The negative sign of the coefficient means that an increase in the number of board meetings reduces the likelihood of tax planning (i.e., reduces the probability that a firm will avoid tax by maintaining an ETR below 30%). This suggests that more diligent boards are less likely to engage in tax avoidance.

Of note, the negative coefficient in a probit model implies that the probability of being classified as a tax-avoiding firm decreases as board meeting frequency increases. The magnitude of -0.4774 means that for each additional board meeting, there is a statistically significant reduction in the z-score associated with tax avoidance, translating to a lower probability of engaging in such tax planning practices. Therefore, the hypothesis test rejects the null hypothesis (H_0: More diligent boards do not significantly engage in more tax planning) at the 5% level, affirming instead that more diligent boards significantly reduce the likelihood of tax planning among listed agricultural firms in Nigeria (β = -0.4774; p = 0.0006).

4.3 Discussion of Findings

The study found that more diligent boards significantly reduce the likelihood of tax planning among listed agricultural firms in Nigeria (β = -0.4774; p = 0.0006). This outcome suggests that when boards meet more frequently, they are likely to exercise stronger oversight and demand higher levels of financial accountability and transparency from management. Frequent board meetings provide a platform for timely discussions around financial decisions, including taxation, ensuring that aggressive tax avoidance strategies are scrutinized or rejected. In the context of agricultural firms—many of which operate under considerable scrutiny due to subsidies, government support, and sustainability concerns—there may be a stronger ethical or compliance culture that disincentivizes excessive tax avoidance. Additionally, board diligence may enhance risk management by discouraging practices that could trigger regulatory or reputational consequences. Hence, rather than facilitating opportunities to avoid tax, diligent boards in this sector are more likely to act as a deterrent, reinforcing the importance of legal and transparent tax behavior.

On one hand, strong support for this finding comes from studies like Umar et al. (2024), who reported that board meeting frequency significantly increases the effective tax rate among Nigerian manufacturing firms—implying that more frequent meetings curb tax avoidance. Okpala and Omaliko (2022) similarly found that diligent boards lead to less aggressive tax behavior in ICT, healthcare, and oil and gas sectors. Makka and Suleiman (2024) also reinforce this view, showing that board independence and diversity promote tax compliance, an outcome logically linked to active board oversight. These perspectives collectively affirm the current study's outcome that diligent boards act as ethical gatekeepers in financial reporting and tax strategy, particularly in firms likely to be under public or regulatory scrutiny, such as those in agriculture.

However, the literature also presents contrasting perspectives that add shades to this conclusion. Islam et al. (2025) found that frequent board meetings were associated with a reduction in effective tax rate in Bangladeshi engineering firms, implying that board diligence might instead encourage tax avoidance—perhaps by leveraging tax-saving strategies in response to competitive pressure. Ebimobowei (2022) and Kang'ara (2019) similarly observed negative, though statistically insignificant, relationships in Nigerian pharmaceutical and Kenyan service firms, respectively. These findings suggest that frequent board meetings may not always exert a disciplinary effect on tax planning behavior and, in some cases, may even facilitate strategic tax minimization. Yahaya (2023), focusing on Nigerian banks, found no significant association, further complicating the picture and emphasizing that institutional context and regulatory environment play key roles in how board diligence affects tax outcomes. Complementing these findings, Peter et al. (2020) and Onukelobi et al. (2024) observed positive but statistically insignificant effects of board meetings on tax planning, indicating that frequency alone may be insufficient to shape tax behavior without other supporting governance mechanisms. Uniamikogbo (2024) provides a broader interpretation, suggesting that the structural integrity of the entire governance framework—not just board diligence—determines a firm's approach to tax planning. Therefore, while the current study contributes a strong sector-specific hint, it also highlights the need for a subtle understanding of board effectiveness within different corporate and regulatory contexts.

5.0 Conclusion and Recommendation

The board of directors plays a proactive and strategic oversight role in ensuring transparency, accountability, and regulatory compliance across all areas of business operations, including tax planning. Diligent boards meet frequently, adequately review reports, scrutinize management decisions, and establish policies that guide ethical financial behavior. In this setting, tax planning is expected to be conducted responsibly—within legal bounds and aligned with the company's long-term goals and corporate social responsibility commitments. Ideally, firms with highly diligent boards will adopt prudent tax strategies that optimize tax liabilities without engaging in avoidance or evasion tactics. Such practices not only enhance the company's reputation and investor confidence but also contribute to national development through responsible tax contributions.

The finding that more diligent boards significantly reduce the likelihood of tax planning among listed agricultural firms in Nigeria has profound implications for corporate governance and tax behavior within the sector. It suggests that board diligence, characterized by active engagement and oversight, plays a crucial role in promoting ethical tax practices and minimizing tax avoidance strategies. This result highlights the potential of corporate governance structures to foster transparency and accountability in financial reporting, which is especially important in industries like agriculture, where regulatory scrutiny and social expectations for fair tax contributions are increasingly important. In order words, firms with more engaged boards may be less likely to exploit tax loopholes, contributing to a more ethical and responsible corporate culture.

Since a more diligent and involved board will likely ensure that the firm engages in responsible tax planning, thus fostering greater corporate transparency and accountability, we recommend that regulatory bodies such as the Securities and Exchange Commission (SEC) and the Nigerian Exchange Group should create and enforce policies that mandate a minimum frequency of board meetings for listed agricultural firms. These policies would help ensure greater board diligence and could mitigate aggressive tax planning, aligning the firms' financial behavior with broader national tax compliance goals.

5.1 Contribution to Knowledge

This study contributes to the literature by addressing key gaps in the existing research on the relationship between board diligence and tax planning. Unlike prior studies by Islam et al. (2025), Makka and Suleiman (2024), Uniamikogbo (2024), Onukelobi et al. (2024), Umar et al. (2024), Yahaya (2023), Okpala and Omaliko (2022), Ebimobowei (2022), Peter et al. (2020), and Kang'ara (2019), which focused primarily on non-agricultural sectors such as manufacturing, banking, pharmaceuticals, and ICT, this study specifically investigates the agricultural sector—a sector previously neglected in this line of inquiry. Moreover, it introduces an innovative approach to measuring tax planning by categorizing firms into binary groups based on whether their effective tax rate falls below or above 30%, rather than treating ETR as a continuous variable. Additionally, this research advances methodological practice by employing the Probit Model to analyze the hypothesized relationship, in contrast to the traditional OLS, correlation, or panel regression methods used in earlier studies. These contributions enhance the depth and relevance of corporate governance and tax planning literature by offering fresh perspectives in terms of sector focus, measurement, and analytical technique.

5.2 Limitations of the Study and Suggestions for Further Studies

This study had a few important limitations. First, it only used five listed agricultural firms in Nigeria because that's the total number available, which means the results may not reflect the behavior of all agricultural firms in the country. Second, the findings are limited to the agricultural sector and cannot be applied to other sectors of the economy. Lastly, since the study used secondary data from annual reports, the reliability of the results may have been affected by restatements made by the firms in some years.

Future researchers can build on this study by including more agricultural firms, such as private or unlisted ones, to get a broader picture of the sector. They could also compare the results with other sectors like manufacturing or banking to see if board diligence works the same way. In addition, using primary data—like interviews or questionnaires—may help provide more perspectives and avoid problems that come with using only company reports.

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