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Effect of Board Characteristics on Tax Aggressiveness of Quoted Deposit Money Banks in Nigeria

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Abstract
Nigeria has faced recurring financial challenges over the years, leading to poor performance among its financial institutions. These difficulties have been largely linked to inadequate corporate governance practices. This study looks at how board characteristics affect tax aggression among Nigerian listed deposit money banks from 2012 to 2022. The sample comprises nine deposit money banks listed on the Nigerian Exchange Group utilizing a robust random effect regression model after diagnostic tests. The findings revealed that board independence and board size have no significant effect on the cash effective tax rate of Nigeria's listed deposit money banks over the study period. The findings also indicate that board gender diversity has a significant favourable effect on the cash effective tax rate of quoted deposit money banks in Nigeria over the period under consideration. The study suggests, among other things, that Nigerian deposit money banks should maintain a smaller board size, ideally comprising five members with substantial expertise in tax matters, to facilitate swift decision-making and mitigate tax aggressiveness. Furthermore, it recommends reducing the proportion of female directors on boards to one-third, while ensuring that those appointed possess significant experience in tax affairs to help curb tax aggressiveness within Nigerian deposit money banks.

Keywords
Board Characteristics, Financial Firms, Tax Aggressiveness

INTRODUCTION

The characteristics of a board pertain to its qualities, attributes, and composition, playing a pivotal role in overseeing organizational management and strategic decision-making. Regular self-assessment and performance evaluations are crucial for the board's continual improvement, identifying areas for enhancement and ensuring effective functioning. The Financial Reporting Council of Nigeria established its Code of Corporate Governance of 2018 underscores the board's responsibility in aligning corporate entities with innovations to safeguard the interests of investors and stakeholders, thereby bolstering corporate performance and deterring tax aggressiveness in Nigeria. Okafor (2009) suggests that the primary purpose of the board is to direct and regulate corporate activities. Corporate governance codes aim to address agency issues and other financial reporting malpractices, including tax aggressiveness.

Independent directors play a pivotal role in ensuring objective and conflict-free tax-related decisions within organizations. A higher proportion of independent directors tends to promote more conservative tax strategies, thereby mitigating tax aggressiveness. Enhanced board independence fosters objective decision-making concerning tax

aggressiveness, aligning with long-term organizational objectives and deterring practices favouring tax aggressiveness. According to Li et al. (2018), Independent boards and stringent company governance standards help to reduce the possibility of tax avoidance. In contrast, in boards where executive directors are dominant and their salary is tied to performance, there may be a propensity for engaging in tax aggressive practices. Moreover, the size of the board can affect the level of tax aggression as smaller boards may find it easier to reach consensus on tax-related matters compared to larger boards with diverse backgrounds. Ribeiro et al. (2015) suggested that larger boards are connected with higher effective corporate tax rates, although such factors can vary across different business environments and warrant examination within the context of the Nigerian business landscape.

Increased representation of women on corporate boards is anticipated to enhance the monitoring and oversight functions concerning managerial decisions on tax liability, potentially reducing tax aggressive activities. The presence of more female board members can bolster the board's efficacy in curbing tax aggressiveness. Lakhal et al. (2015) highlighted that gender diversity on the board influences tax behaviour, with female directors playing a vital role in controlling and monitoring management actions and reports. This is attributed to factors such as improved attendance at board meetings and heightened monitoring capabilities.

Tax aggressiveness refers to a company's inclination to employ tax avoidance tactics that stretch the boundaries of tax laws and regulations. Such behaviour aims to decrease tax payments, potentially bolstering short-term profits but also carrying legal and reputational hazards. In Nigeria, as in numerous other nations, tax aggressiveness among financial firms has garnered increased attention from regulators, policymakers, and researchers. It involves leveraging lawful loopholes to evade or minimize tax payments. However, if attained using illegal means, activities, or procedures, it is considered deceptive or fraudulent, with criminal consequences. According to Kiabel and Nwikpas (2001), tax aggressiveness is defined as planning and carrying out commercial actions within the confines of existing regulations to optimize or secure the best tax position while pursuing set goals.

Firm size is a crucial factor in corporate organizational management, as larger companies typically encompass diverse interests compared to smaller ones. As a result, the study included company size as a control variable. This research aimed to address the gaps in the literature, particularly concerning methodological weaknesses identified in previous studies. Moreover, previous research predominantly focused on other countries rather than Nigeria. This study sought to fill this gap and specifically examine the periods regarding International Financial Reporting Standard (IFRS) implementation in Nigeria, as opposed to the practice of incorporating both pre-IFRS and post-IFRS periods utilized by most previous studies in the country.

Tax avoidance offers substantial economic benefits, as highlighted by Scholes et al. (2009), and can serve as a reasonably cheap source of financing, as noted by Armstrong et al. (2012). Nevertheless, aggressive tax avoidance strategies may entail significant observable costs, such as fines and legal fees, as well as unobservable costs, including excess risk and damage to corporate reputation.

Boards with a higher proportion of insiders may face challenges regarding independence, as their monitoring role may be compromised due to involvement in self-reviewing activities. Conversely, an excessive number of outsiders could widen the gap between management and shareholders, as they may have an inadequate understanding of the company's operations (Li et al., 2018). A board comprised entirely of independent members may struggle to effectively carry out its functions, making it difficult to achieve a balance between independent non-executive directors and executive directors accountable for board tasks. Different scholars offer varying perspectives on the optimal quantity of non-executive directors necessary to strengthen board independence and mitigate Firms that are tax aggressive. In Nigeria, regulatory bodies and governance norms developed by the Central Bank of Nigeria, the Securities and Exchange Commission, and the Financial Reporting Council of Nigeria advocate for different board sizes. However, the literature presents contradictory views on the optimal board size necessary to mitigate tax aggressiveness.

In some instances, some women possess significant managerial skills, experience, and political influence, yet they may not have the opportunity to demonstrate these abilities due to policy biases (Ogbeide & Obaretin, 2018). Examination of the yearly annual reports of companies, including financial firms in Nigeria, often reveals a scarcity of female board directors in the directors' report section. It is not uncommon to find only one or, at most, three female board directors in a large board size. The exclusion of female counterparts from the composition of non-executive directors on corporate boards can impede expected oversight functions and negatively impact strategic management, including efforts to reduce tax liabilities.

For numerous years, Nigeria has confronted a myriad of financial distress issues. The Central Bank of Nigeria (CBN) audit report identified several banks, including Union Bank Plc, Afri Bank Plc, Oceanic International Bank Plc, and Intercontinental Bank Plc, as facing significant financial challenges due to manipulative and aggressive tax practices. Dabari and Saidin (2015) suggested that the ongoing underperformance of Nigerian financial institutions could be attributed to poor corporate governance practices.

Recent empirical research, such as that by Imuetinyan et al. (2023), Malgit and Kanang (2023), and Melissa (2022), has highlighted a notable limitation: the data utilized in their analyses predominantly spanned up to 2020 or earlier, with only a few exceptions like Sylvester and Nkechi (2022), who extended their data to 2021. This observation extends not only to studies conducted in Nigeria but also to research carried out in various countries worldwide. This scarcity of up-to-date literature underscores the need for further investigation. Thus, this study intends to close this gap by evaluating the impact of board features on tax aggressiveness among Nigerian listed corporations, using panel regression

techniques and data up to 2022. By doing so, it hopes to contribute to the little body of writing on this topic in the Nigerian setting.

The main objective of this study is to examine the effect of board characteristics on tax aggressiveness of quoted deposit money banks in Nigeria. The study specifically intends to: (i) assess the effect of board independence on cash effective tax rate of listed financial firms in Nigeria; (ii) ascertain the effect of board size on cash effective tax rate of listed financial firms in Nigeria; and (iii) determine the effect of board gender diversity on cash effective tax rate of listed financial firms in Nigeria.

Based on the above-stated specific objectives, these hypotheses are formulated thus:

Ho1: Board independence has no significant effect on cash effective tax rate of listed financial firms in Nigeria.

Ho2: Board size has no significant effect on cash effective tax rate of listed financial firms in Nigeria.

Ho3: Board gender diversity has no significant effect on cash effective tax rate of listed financial firms in Nigeria.

MATERIALS

Conceptual Framework

A conceptual framework is a diagrammatical representation of all the concepts that are related to the concerned research work. The conceptual framework of this study, adapted from Ahmed and Mounira (2015), consists of three proxies: Board Independence (BI), Board Size (BZ), and Board Gender Diversity (BGD) as independent variables, and one proxy: Cash Effective Tax Rate (CETR) as a dependent variable, with Firm Size as a control variable.

Fig. 1 Adapted Conceptual Framework of the Study Compiled by the Researcher 2023

Board characteristics

Board characteristics encompass the specific attributes, qualities, and features that define the board of directors or governing body of an organization. These characteristics play a pivotal role in determining the board's effectiveness in fulfilling its responsibilities and contributing to the organization's success. The role of the board is multifaceted and challenging, requiring a team of individuals to leverage their competencies and capabilities, collectively representing the social capital of the firm dedicated to governance functions (Carpenter & Westphal, 2001).

The board serves as a strategic resource, developing and selecting new choices to achieve the firm's goals. Its tasks include defining corporate policy, approving strategic plans, allowing the selling of more securities, and overseeing management by hiring, advising, compensating, and, if necessary, removing executives. In addition, the board is responsible for succession planning, deciding board size, and selecting new members, all of which require shareholder approval. As a result, the success of the board of directors in monitoring management and exercising control on behalf of shareholders is based on a variety of factors, including the board's size, the influence of independent non-executive directors, and the impact of female directors, among others.

Board independence

Independent non-executive directors play an important role in corporate governance frameworks, bringing an objective perspective and ensuring accountability. They are directors with no other affiliation to the organization beyond their board position. The ratio of non-executive to executive directors on the board serves as a measure of independence, to enhance integrity, transparency, and accountability. Clifford (1997) emphasizes the importance of this ratio in strengthening board independence and minimizing insider influence.

Bhagat and Bolton (2008) emphasize the role of Independent non-executive directors serves as a balancing factor on the board, demonstrating sound corporate governance procedures. Similarly, Qiu and Yao (2009) emphasize the importance of independent directors in maintaining corporate governance norms. Board independence is defined as the proportion of directors that have no link with the company aside from their directorship. This measure, as proposed by Millstein and MacAvoy (1998) and Fama & Jensen (1983), is calculated by dividing the number of independent non-executive directors by the total board membership.

Board size
Board size, or the total number of members on a company's board, is an important component in determining board effectiveness and, ultimately, corporate performance. The Nigerian Code of Corporate Governance (2018) emphasizes the need for a board size that is adequate to efficiently oversee the company's activities while being proportionate to its size and complexity. Jensen (1993) highlights the preference for smaller board sizes, attributing it to technological and organizational changes that drive cost-cutting and downsizing initiatives. Hermalin and Weisbach (2003) suggest that larger boards may be less effective due to increased agency problems, potentially resulting in some directors being passive participants. Lipton and Lorch (1992) recommend capping the number of directors at around seven or eight to maintain effective control by the CEO and facilitate meaningful discussions. They argue that larger boards can lead to less cohesive decision-making processes and hinder productive dialogue. In this study, board size is defined as the total number of executive and non-executive directors on a company's board.

Board gender diversity
There is a growing body of evidence suggesting that diversity, particularly in terms of gender representation, can significantly enhance board effectiveness. Professional women are frequently represented on company boards, as they are perceived to bring diverse perspectives and valuable expertise stemming from broader professional experiences (Bellucci et al., 2010; Srinidhi et al., 2011). Research by Lanis et al. (2015) and Adams and Ferreira (2009) support the idea that firms with gender-diverse boards foster innovation and uphold high-quality decision-making processes. Lanis et al. (2015) further emphasize that gender diversity can lead to greater honesty, ethical standards, independent reasoning, and informed decision-making, thereby enhancing transparency and credibility within the board. However, it's worth noting that gender-diverse boards may encounter challenges such as prolonged decision-making processes and increased frequency of conflicts due to varying perspectives. Despite these potential drawbacks, the overall consensus is that gender diversity on boards brings significant benefits to companies. Gender diversity is defined in this study as the ratio of women on a company's board of directors.

Tax aggressiveness
Tax aggressiveness refers to a company's proactive efforts to reduce tax liabilities through aggressive tax planning and evasion techniques. Salisu et al. (2023) defined tax aggressiveness as a company's purposeful efforts to cut tax payments through aggressive tax planning and evasion techniques. Frank (2009) characterizes aggressive tax returns as manoeuvres aimed at reducing taxable income, often seen as a form of tax management or planning that could potentially lead to tax evasion. Similarly, Frank et al. (2009) defined tax aggressiveness as the deliberate manipulation of taxable income through aggressive tax planning actions, which includes both legal and potentially problematic practices. Frischmann et al. (2008) offered a narrower definition, defining tax aggressiveness as engaging in significant tax activities without robust justification. Chen et al. (2013) and Frank et al. (2009) elaborate, that corporate tax aggressiveness is defined as the intentional manipulation of taxable income downwards using various tax planning tactics, including those that may operate in legal grey areas or even pass into unlawful territory.

Kiabel and Nwikpasi (2001) defined tax aggressiveness as the strategic planning and execution of company activities within the parameters of existing tax legislation to attain the most advantageous tax position while accomplishing business objectives. Hoffman (1961) describes tax aggressiveness as a taxpayer's capacity to structure financial activities to reduce tax liability. In line with Pniowsky's (2010) definition, this study adopts tax aggressiveness as the deliberate arrangement of financial affairs to defer, reduce, or eliminate tax obligations to the government.

THEORIES UNDERPINNING THE STUDY

Agency theory
The agency theory, which is a fundamental concept in the subject of corporate governance and economics, was hypothesized by Michael C. Jensen and William H. Meckling in their landmark study titled "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." This seminal work was originally published in the Journal of Financial Economics in 1976. According to agency theory, there might be a conflict of interest between shareholders and management. Agency theory is a framework used in economics and management to examine and comprehend the interaction between principals (usually owners or shareholders) and agents (often managers or employees) inside a company.

Agency theory emphasizes the significance of aligning managers' interests with those of shareholders. Board characteristics play a critical role in achieving this alignment, including monitoring and influencing a firm's tax aggressiveness. Boards with independent and knowledgeable members, effective governance mechanisms, and a commitment to shareholder interests are more likely to make informed decisions regarding tax planning that strike a balance between tax optimization and ethical, legal, and reputational considerations.

Upper echelons theory
The Upper Echelons Theory was postulated by Donald C. Hambrick in 1984. This theory is primarily associated with the field of organizational behaviour and management. Donald C. Hambrick's seminal paper, titled "The Dominant Logic: A New Linkage Between Diversity and Performance," was published in the Academy of Management Review in 1984, where he introduced the concept.

The upper echelons theory suggests that individuals' characteristics, such as board members' demographics and experiences, influence decision-making. Boards with diverse backgrounds may have different attitudes toward tax aggressiveness, with some members advocating for more conservative tax strategies while others support more aggressive approaches.

Donald Hambrick and Phyllis Mason established the Upper Echelons Theory, a well-known concept in organizational psychology and strategic management, in 1984. This hypothesis holds that the decisions and actions of top leaders within an organization are heavily influenced by their backgrounds, experiences, values, and cognitive frameworks.

The Upper Echelons Theory offers a valuable framework for understanding how the personal characteristics, experiences, and values of top executives, including those on the board of directors, can influence a firm's tax aggressiveness. Board composition and the cognitive frames of top executives play a crucial role in shaping a company's approach to taxation, which can have important implications for financial performance and corporate governance.

EMPIRICAL REVIEW

Board independence and tax aggressiveness

Imuetinyan et al. (2023) undertook a study to investigate the association between board qualities and tax planning in Nigerian corporate entities. They specifically examined several board attribute factors such as board independence (BIND), board size (BSIZ), and gender diversity (GDIV) to determine their impact on tax planning. The study examined eighty-five non-financial companies registered on the Nigerian Stock Exchange (NSE) between 2016 and 2020. Using panel least squares regression analysis and Eviews 9.0 econometric software, the researchers discovered that board independence (BIND) had a negative and statistically insignificant connection with tax planning (TAXP). In contrast, board size (BSIZ) and gender diversity (GDIV) showed a positive and substantial relationship with tax planning (TAXP). The findings highlight the necessity of thoroughly examining the impact of board size (BSIZ) and gender diversity (GDIV) on tax planning in Nigerian enterprises. The study suggests that future research should place a strong emphasis on these elements when investigating board characteristics in connection to tax planning in Nigerian corporate situations. While the study used suitable statistical procedures for data analysis, it is worth noting that the research was conducted in 2023 and the data analyzed only went up to 2020. As a result, the study has to be updated to reflect Nigeria's current economic trends.

Sylvester and Nkechi (2022) undertook a study to investigate the association between corporate board qualities and tax aggression among listed non-financial enterprises in Nigeria. The study covered a population of 114 non-financial enterprises with a purposive sampling technique selecting seventy-five (75) firms based on data availability, Secondary data obtained from audited yearly financial reports from 2012 to 2021 formed the basis of analysis. Utilizing panel least squares regression and favouring fixed effect regression for results interpretation with Eviews 10 econometric software, the researchers found several significant findings. Board independence, expertise, and the CEO's nationality were positively and significantly associated with tax aggressiveness in listed non-financial firms in Nigeria. Conversely, board size and board meetings exhibited negative and insignificant effects on tax aggressiveness, while board gender diversity showed a positive but insignificant impact. The study's recommendations include encouraging non-financial firms to increase the presence of independent directors on their boards, as they are perceived to influence tax management strategies and contribute meaningfully to tax aggressiveness. Moreover, the emphasis on larger board sizes should be discouraged due to their insignificant effect on tax aggressiveness. Furthermore, the study proposes reducing the frequency of board meetings, which was found to have no significant effect on tax aggression in Nigerian non-financial enterprises. This study employed appropriate statistical tools for data analysis and benefited from being conducted in 2023, with data covering up to 2021, thereby reflecting current economic trends in Nigeria.

Ogbeide and Peter (2020) undertook an empirical analysis investigating the impact of female directors on tax aggressiveness among listed insurance firms in Nigeria, focused on the years 2014-2018. The study included all quoted insurance firms as of December 31, 2018, with a sample size of twenty-eight (28) chosen for data gathering and analysis. The study's data analysis used the Generalized Method of Moments, and the results were significant. First, board size had a negative and statistically significant impact on tax aggression in the Nigerian insurance business. Second, female directors were shown to be significantly and positively associated with tax aggression among Nigerian insurance enterprises. Third, board independence was judged important and had a good impact on tax aggressiveness in the insurance industry. Finally, business size was found to have a negative effect on tax aggression, albeit not statistically significant. The study's adoption of an adequate statistical technique for panel data analysis aided the robustness of the findings. These findings provide insight into the complex relationship between board composition, notably the number of female directors, and tax aggression in Nigerian insurance companies.

Aburajab et al. (2019) undertook a study to investigate the association between board of directors characteristics and tax aggression among Jordanian listed enterprises. Between 2013 and 2017, the study selected 140 Jordanian enterprises. The model was estimated using ordinary least squares regression analysis. The study's findings demonstrated a negative association between board composition and independence, as well as tax aggression. Furthermore, the study discovered a significant association between board dualism and tax aggressiveness in Jordanian enterprises. The study utilized appropriate statistical tools for data analysis, contributing to the reliability of the results. However, it is noteworthy that the study was conducted in 2019, with data spanning up to 2017. Consequently, there is a need for an

update to reflect current economic trends. Moreover, the study's focus on Jordanian firms limits its generalizability, as environmental differences may affect the applicability of the findings to other contexts, such as Nigeria.

Luai et al. (2019) did a study on the association between the board of directors' characteristics and tax aggression among Jordanian listed enterprises. The study sampled 140 Jordanian enterprises from 2013 to 2017 and used ordinary least square regression analysis to estimate their model. The study found a negative and negligible link between board composition, independence, and tax aggression. In contrast, the study found a link between board dualism and tax aggression in Jordanian enterprises. The study used acceptable statistical tools for data analysis. However, it is worth noting that the study was conducted in 2019, with data acquired up to 2017. Thus, there is a need for an update to reflect current economic trends. Additionally, the study's focus on Jordanian firms limits its generalizability to other contexts, such as Nigeria, due to potential environmental differences.

Shelly et al. (2018) undertook a study to investigate the impact of corporate governance structures on tax aggressiveness, with earnings management acting as an intervening variable. The study sampled 43 manufacturing enterprises using a purposive sampling technique and analyzed panel data. The data was analyzed using a route analysis model. The study's findings showed that institutional ownership and the proportion of independent board commissioners have a considerable detrimental impact on earnings management. Furthermore, institutional ownership was shown to have a strong negative impact on tax aggression. Conversely, the proportion of independent board commissioners had a considerable beneficial impact on tax aggression. Furthermore, the study found that earnings management characteristics may moderate the association between institutional ownership, the proportion of independent board commissioners, and tax aggression. The study employed appropriate statistical tools for data analysis. However, it should be noted that the study was conducted in 2018, thus there is a need for an update to reflect current economic trends. Nonetheless, the research provides valuable insights into the intricate link between company governance processes, earnings management, and tax aggressiveness.

Board size and tax aggressiveness

Malgit and Kanang (2023) conducted a study investigating the impact of the board of directors on corporate tax planning among Manufacturing and Allied Firms registered on Kenya's Nairobi Securities Exchange. Using an explanatory research methodology, the investigation focused on data from nine (9) manufacturing and related enterprises listed on the Nairobi Securities Exchange between 2010 and 2019, applying descriptive and regression analysis. The study found that board independence had a significant adverse effect ($p=0.009$, $\beta=-0.0037$) on the effective tax rate of Nairobi Securities Exchange-listed manufacturing and associated firms. Board size and gender diversity did not significantly affect the effective tax rate of these enterprises ($p=0.783$, $\beta=-0.0197$ and $p=0.146$, $\beta=-3.9573$, respectively). The study recommended that listed firms prioritize the composition of well-balanced boards comprising both executive and non-executive directors to enhance oversight functions, leading to more efficient tax planning. While the study utilized appropriate statistical tools for data analysis, it is important to note that the research was conducted in 2023, and the data analyzed only covered up to 2019. Thus, an update is necessary to reflect current economic trends. Additionally, the study's focus on the Kenyan environment limits its generalizability to other contexts, such as Nigeria, due to potential environmental differences.

In 2019, Onatuyeh and Odu undertook a study to investigate the association between corporate board features and tax aggression in Nigeria's industrial sector. The study examined a sample of 49 manufacturing enterprises listed on the Nigerian Stock Exchange (NSE) as of December 2016. The data for analysis were entirely derived from these firms' annual financial statements spanning the period from 2011 to 2016. The researchers used a panel regression approach and chose the fixed effect model based on the results of the Hausman test. The findings revealed that both board size and board independence had a negative and statistically significant impact on tax aggression among Nigerian manufacturing enterprises, but board gender diversity had no significant effects. The study suggested that the insufficient representation of women on corporate boards could be a plausible reason for this outcome. The utilization of the panel regression technique was deemed appropriate for this study, providing reliable results. However, it is important to note that the study was conducted in 2019, thus an update is necessary to reflect current economic trends in Nigeria. Nonetheless, the study provides useful insights into the relationship between corporate board features and tax aggression in Nigeria's industrial sector.

Evangelos et al. (2019) conducted an analysis investigating the interplay between tax evasion, firm characteristics, and corporate governance standards in Greece. The study used quantitative and qualitative data gathered from the annual financial reports of 56 companies listed on the Athens Stock Exchange from 2011 to 2015. The study used a linear regression model using the random effect approach to estimate the associations. The results revealed a statistically significant positive relationship between the cash effective tax rate and company size, as well as a substantial negative link with return on capital employed. Furthermore, it indicated that larger Greek enterprises were less likely to dodge taxes, although those with higher returns on capital employed were more likely to do so. Notably, the study showed no statistically significant relationship between company governance factors and tax avoidance. Despite using a panel regression technique known for producing strong results, the study's timing in 2019 makes it somewhat out of date, demanding an update to reflect current economic trends, particularly in the context of Nigeria.

Agustina et al. (2018) undertook a study to explore the impact of corporate governance procedures on tax avoidance among Indonesian Stock Exchange-listed manufacturing enterprises. The study included all manufacturing firms listed on the market between 2012 and 2016, with a sample of 87 companies selected for detailed analysis. Smart partial least squares (PLS) were used for data analysis and hypothesis testing. The study found that corporate governance procedures had a negative and significant impact on tax avoidance. Board size was discovered to have a positive and substantial effect on tax avoidance, but institutional ownership had a negative and significant effect on tax avoidance. The study utilized appropriate statistical tools for data analysis, enhancing the reliability of the findings. However, it is important to note that the study was conducted in a different environmental context, namely Indonesia, which limits its generalizability to other settings such as Nigeria, due to potential environmental differences. Nonetheless, the research provides valuable insights into the relationship between corporate governance mechanisms and tax avoidance in the manufacturing sector.

In 2018, Bosun-Fakunle et al. conducted research to investigate the relationship between board of director traits and tax aggression. The study analyzed data from 20 manufacturing companies listed on the Nigerian Stock Exchange over 10 years from 2006 to 2016. The data were analyzed using both conventional least squares regression and correlation analysis approaches. The study found no significant association between board size and tax aggression in the studied industrial enterprises. The study used proper statistical tools for data analysis, which increased the dependability of the results. However, it is important to highlight that the study included data from both the pre-(2006-2011) and post-(2012-2016) implementation of the International Financial Reporting Standards (IFRS) in Nigeria. This could potentially affect the findings, as changes in reporting standards might influence tax planning behaviours and outcomes within the sampled companies. Thus, it is essential to consider this factor when interpreting the study's results.

Sunday (2017) did an empirical investigation on the association between corporate characteristics and tax aggressiveness among listed Nigerian firms. The analysis used pool and panel data from 2012 to 2016, obtained from the selected firms' annual reports. The data was analyzed using both the panel and dynamic panel approaches. The study found numerous significant correlations between corporate characteristics and tax aggression. Specifically, business size was discovered to have a favourable and considerable impact on tax aggression. Furthermore, there was a significant and positive correlation between external audit quality and tax aggression. On the other hand, leverage had a significant negative link with tax aggression, whereas interest charges had a large positive relationship. The study used appropriate statistical tools to evaluate the panel data, which improved the robustness of the results. These findings provide important insights into the interplay of corporate characteristics and tax aggression in the Nigerian setting.

Uchendu et al. (2016) undertook a study to investigate the association between corporate governance structures and tax planning in Nigeria. The inquiry was based on documented material obtained from audited financial statements of banks listed on the Nigerian Stock Exchange from 1994 to 2014. The Econometric View (E-view statistical package) was used to analyze the data, and the model was estimated using ordinary least squares regression. The study's findings found no meaningful relationship between board size and tax savings for Nigerian enterprises. Despite the use of proper statistical procedures for data analysis, it is crucial to highlight that the study used data from both before (1994-2011) and after (2012-2014) the implementation of the International Financial Reporting Standards (IFRS) in Nigeria. This amalgamation of data from different regulatory periods may potentially influence the findings, as changes in reporting standards could impact tax planning behaviours and outcomes within the studied firms. Therefore, it is crucial to consider this factor when interpreting the study's results.

Ahmed and Mounira (2015) conducted a study on the impact of governance mechanisms on tax aggression, with an emphasis on the Tunisian environment. The study sampled Tunisian-listed enterprises from 2006 to 2012 and used a random effect regression model for analysis. The study found that gender diversity on company boards, managerial ownership, and concentration ownership all had a substantial impact on firms' tax aggressiveness activities. Board diversity and managerial ownership were positively connected with the effective tax rate, however, increases in concentration ownership had a negative effect. However, there were no significant effects of corporate board size or external auditor profile on tax aggression. The study used a panel regression strategy for data analysis, which was a valid method. Nonetheless, it is important to note that the study was conducted in a different environmental context, namely Tunisia, which may limit the generalizability of the findings to other settings such as Nigeria due to potential environmental differences. Nonetheless, the research provides valuable insights into the relationship between governance mechanisms and tax aggressiveness within the Tunisian context.

Aliani and Zarai (2012) did a study that looked into the impact of demographic diversity on corporate tax planning in American businesses. The study used a sample of 300 corporations from the S&P 500 index from 1996 to 2009. A fixed-effect regression model was used to estimate their model. The study found that gender diversity on the board had no meaningful effect on tax planning. However, board independence has been shown to improve tax practice. Furthermore, return on assets (ROA) was discovered to be considerable and related to tax planning. In contrast, no significant connections were found between board size and business size. The study used a trustworthy data analysis methodology called panel regression. Nevertheless, it is essential to note that the study was conducted in a different environmental context, specifically in American firms, which may limit the generalizability of the findings to other settings such as Nigeria due to potential environmental differences. Nonetheless, the research contributes valuable insights into the relationship between demographic diversity and tax planning within the American corporate landscape.

Board gender diversity and tax aggressiveness

Melissa (2022) investigated the relationship between board of directors qualities and tax avoidance, as well as the mediating effect of sustainability performance in this correlation, in the context of Indonesian enterprises. Using purposive selection tactics, the study found 33 businesses listed on the Indonesian Stock Exchange (IDX) that fit the sample criteria from 2016 to 2020. The findings found that several independent variables, such as gender diversity, independent commissioners, and board size, had little impact on the level of tax avoidance in Indonesia. Furthermore, the findings revealed that in the Indonesian context, sustainability performance did not operate as a mediator between board features and tax avoidance. The study encouraged additional research to increase the size of the study sample, such as extending the observation time to more than five years and including companies from various nations. In addition, it was recommended that future research use various measurement methods for each variable. While the study utilized appropriate statistical tools for data analysis, it is essential to note that it was conducted in 2022, with data collected up to 2020. Therefore, updating the data to reflect current economic trends in Nigeria is warranted. Furthermore, considering the study's focus on Indonesia, caution should be exercised in generalizing the findings to other environments due to potential environmental differences.

Uniamikogbo et al. (2019) conducted a study to investigate the relationship between corporate governance and tax aggression in Nigeria, with a focus on oil and gas marketing enterprises listed on the Nigerian Stock Exchange as of December 31st, 2017. The study used a secondary data gathering strategy, obtaining data from the selected firms' annual reports and accounts during the period 2013–2017. Data were analyzed using descriptive statistics and Ordinary Least Squares (OLS) regression. The study found a favourable and significant association between gender diversity, board size, and tax aggression. Conversely, CEO dualism has a negative but substantial link with tax aggression. Furthermore, ownership concentration had a negative but small link with tax aggression in Nigerian oil and gas marketing organizations. The study used proper statistical tools for data analysis, which increased the dependability of the results. However, it is crucial to highlight that the study was carried out in a different environmental context, specifically Nigeria, which may limit the findings' applicability to other settings due to probable environmental variances. Nonetheless, the study gives important insights into the relationship between corporate governance and tax aggression in Nigeria's oil and gas marketing sector.

Prasetyo (2019) examined the impact of gender diversity on the board of directors on tax avoidance was studied using data from all listed firms on the Indonesian Stock Exchange, excluding financial companies, from 2012 to 2017. The study used fixed-effect regression analysis with the STATA 14.0 program. The study found that gender diversity on the board of directors had no meaningful impact on tax avoidance. The study also conducted four interaction tests between the dependent variable and several independent variables, such as the independent board, audit committee, Big Four auditors, and blockholders. However, none of these tests found a substantial effect of gender diversity on tax avoidance. Using appropriate statistical approaches for panel data analysis, the study gave accurate insights into the association between gender diversity on the board of directors and tax avoidance. Nonetheless, it is important to note that the study was conducted in Indonesia, which may limit the findings' applicability to other environments, such as Nigeria, due to probable environmental variances. Despite this restriction, the study provides important insights into the significance of gender diversity in corporate governance and how it affects tax-related behaviours.

In 2018, Mohammadreza and Mahdi conducted a study to investigate the relationship between the involvement of women on corporate boards and tax avoidance. The sample included 97 firms from 2011 to 2015. Using a fixed effect regression model based on panel data, the study found persuasive evidence that the inclusion of women on company boards considerably reduces corporate tax avoidance. Furthermore, the study found that the negative relationship between the participation of women on boards and corporate tax avoidance is especially strong in larger organizations. By utilizing a panel regression technique, the study employed a robust method of analysis, yielding trustworthy outcomes. However, it is important to note that the study was conducted in a different environmental context, namely the Tehran Stock Exchange, which may limit the generalizability of the findings to other settings such as Nigeria due to potential environmental differences. Nonetheless, the research contributes valuable insights into the impact of gender diversity on corporate governance and tax-related behaviours.

Amin (2017) examined the impact of women's presence and engagement on tax avoidance in Tehran Stock Exchange-listed enterprises. The study sampled 97 companies listed on the Tehran Stock Exchange between 2010 and 2015, and the model was estimated using a fixed-effect regression model. The study's findings showed that the presence and active participation of women on boards of directors had a negative and significant impact on tax avoidance. The study used a panel regression technique, which is a solid tool for this type of research, resulting in strong and consistent results. However, it is important to highlight that the study was done in a specific environmental context, namely the Tehran Stock Exchange, which may limit the findings' applicability to other settings such as Nigeria due to probable environmental variances. Despite this restriction, the study gives important insights into the relationship between women's representation on business boards and tax avoidance strategies.

Methods

An ex-post facto research design is utilized in this study, considering its alignment with the specific objectives and the availability of panel data. This design is deemed suitable as it allows for the examination of relationships among variables after they have naturally occurred. The population being investigated comprises ten (10) deposit money banks registered

on the Nigerian Exchange Group as of December 31, 2022. The sample size consists of nine (9) deposit money banks listed on the Nigerian Exchange Group, with at least one year preceding the 2012 implementation of International Financial Reporting Standards (IFRSs) in Nigeria. This timeframe encompasses the years 2012 to 2022 and is chosen due to the significant changes brought about by the adoption of IFRSs, leading to enhanced disclosure in financial statements. This approach allows for the exploration of how variables are interrelated over time, thus providing valuable insights into the impact of IFRS implementation on the financial reporting practices of deposit money banks in Nigeria.

The filter criteria for selecting firms from the financial sector for inclusion in the study are listed below: (i) A bank must have been listed on the Nigerian Exchange Group (NEG) for at least a year before the International Financial Reporting Standards (IFRS) were implemented in Nigeria in 2012. (ii) A bank must continue its listing on the Nigerian Exchange Group and have its shares actively traded on the exchange both during and after the research period. According to these criteria, Jaiz Bank was eliminated from the study. As a result, the sample size for this study consists of nine (9) banks. The study used panel data from secondary sources that included quantitative information. The data were derived from the audited annual reports and accounts of listed deposit money banks submitted to the Nigerian Exchange Group during the study periods. This strategy assures the acquisition of comprehensive financial data, allowing for rigorous analysis and assessment of the impact of IFRS implementation on Nigerian deposit money institutions' financial reporting processes.

This study used Robust Random Effect Model analysis. The study employed this method to investigate the impact of board characteristics (board independence, board size, and board gender diversity) on the tax aggressiveness of Nigerian quoted deposit money institutions. This work builds on the economic models of Ahmed and Mounira (2015), Evangelos et al. (2019), Mohammadreza and Mahdi (2018), and Onatuyeh and Odu (2019). Tax aggressiveness is measured by the cash effective tax rate (CETR), which is calculated by dividing tax expenses by profit before tax. CETR is a function of three explanatory variables: board independence (BI), board size (BZ), and board gender diversity (BGD), with firm size (FSZ) serving as a control.

Therefore;

$$CETR = f(BI, BZ, BGD, FSZ)$$

The expression in the equation is expressed econometrically as follows in a model:

$$CETR_{it} = \alpha_0 + \beta_1 BI_{it} + \beta_2 BZ_{it} + \beta_3 BGD_{it} + \beta_4 FSZ_{it} + \varepsilon_{it} \quad \text{(Model)}$$

Where:

β_1, β_2, β_3, β_4 are parameters to be estimated with a-priori expectations < 0.

CETR= Cash Effective Tax Rate

BI = Board Independence

BZ = Board Size

BGD = Board Gender Diversity

FSZ = Firm Size

α = Constant

e = Error term

i = Firms

t = Periods

Variables Measurement and Justification

Table 1 below explains the measurement of the variables under study.

Variable	Acronym	Type of variable	Measurement	Justification
Cash Effective Tax Rate	CETR	Dependent	Total tax cash expenses/profit before tax.	Aburajab et al (2019); Agustina et al (2018); and Uniamikogbo et al (2019).
Board Independence	BI	Independent	This is the ratio of non-executive directors without shares to the total number of directors on the board.	Aburajab et al (2019); and Ogbeide and Peter (2020).
Board Size	BZ	Independent	This is the total number of directors on the board.	Agustina et al (2018); Evangelos et al (2019); Onatuyeh and Odu (2019); and Uchendu et al (2016)
Board Gender Diversity	BGD	Independent	This is the ratio of women directors on the board to the total number of directors on the board.	Mohammadreza and Mahdi (2018); and Prasetyo (2019).
Firm Size	FSZ	Control	This is the natural logarithm of total assets.	Aliani and Zarai (2012); and Sunday (2017).

Source: Researcher's Compilation, 2022

RESULTS AND DISCUSSION

The data of nine (9) deposit money banks regarding the cash effective tax rate (CETR), board independence (BI), board size (BSZ), board gender diversity (BGD) and firm size (FSZ) were used. The data were analysed with the aid of Stata 15 software using Descriptive Statistics, Pearson Correlation, Shapiro-Wilk Normality Test, Variance Inflator Factor,

Heteroscedasticity test, Breusch-Pagan Lagrangian Multiplier test, Hausman specification test and Robust Random Effect Model based on the data used.

Descriptive statistics

Table 2 Summary of Descriptive Statistics of the Entire Data Set

Variable	Obs	Mean	Std. Dev.	Min.	Max.
CETR	98	0.145	0.083	0.007	0.307
BI	98	0.548	0.149	0.133	0.778
BSZ	98	15.408	2.552	10	21
BGD	98	0.237	0.082	0.06	0.43
FSZ	98	9.185	0.410	8.195	9.970

Source: Researcher's Computation using STATA 15 software, 2022

Table 2 illustrates the distribution of key variables over the study period. The cash effective tax rate (CETR) ranges from a minimum of 0.007 to a maximum of 0.307, with a mean value of 0.145, indicating a satisfactory dispersion within the dataset. Moreover, the standard deviation of CETR stands at 0.083, indicating relatively sluggish growth during the review period. Similarly, board independence (BI) spans from a minimum of 0.133 to a maximum of 0.7778, with a mean value of 0.548, demonstrating adequate variability over the study duration. The standard deviation of BI, at 0.149, suggests gradual development throughout the period under analysis. Furthermore, board size (BSZ) ranges from a minimum of 10 to a maximum of 21, with a mean value of 15.408, indicating a satisfactory spread within the dataset. The standard deviation of BSZ, at 2.552, indicates modest growth over the review period.

Additionally, board gender diversity (BGD) varies from a minimum of 0.06 to a maximum of 0.43, with a mean value of 0.237, showcasing a good distribution within the dataset. The standard deviation of BGD, at 0.082, suggests gradual progress over the study period. Lastly, firm size (FSZ) ranges from a minimum of 8.195 to a maximum of 9.970, with a mean value of 9.185, demonstrating a satisfactory dispersion over the period examined. The standard deviation of FSZ, at 0.410, indicates a gradual increase throughout the study period.

Pearson correlation

Table 3 below is the Pearson correlation matrix for the data set to show the extent of associations between the variables.

Variable	CETR	BI	BSZ	BGD	FSZ
CETR	1				
BI	-0.2128	1			
BSZ	-0.1882	0.0051	1		
BGD	0.3085	-0.2605	-0.1031	1	
FSZ	-0.2323	0.2504	0.2614	-0.2184	1

Source: Researcher's Computation using STATA 15 software, 2022

The correlation matrix serves to gauge the strength of relationships between the proxies of independent variables and the dependent variable, as well as to identify potential associations among the independent variables themselves, thus detecting any collinearity issues in the model.

According to the findings presented in Table 3, there exists a negative and weak relationship of approximately 21% between board independence (BI) and the cash effective tax rate (CETR) of quoted deposit money banks in Nigeria, as indicated by a correlation coefficient of -0.2128. Similarly, a negative and weak relationship of around 19% is observed between board size (BSZ) and the cash effective tax rate (CETR) of quoted deposit money banks in Nigeria, with a correlation coefficient of -0.1882.

Furthermore, the study found a positive and weak association of around 31% between board gender diversity (BGD) and the cash effective tax rate (CETR) of Nigerian quoted deposit money banks, with a correlation coefficient of 0.3085. Furthermore, there is a negative and weak link of around 23% between firm size (FSZ) and the cash effective tax rate (CETR) of quoted deposit money institutions in Nigeria, with a correlation coefficient of -0.2323. It is worth noting that the correlations between the proxies of independent variables themselves have low coefficients, all falling below the acceptable threshold of 0.80, as indicated by Gujarati (2003). indicating no significant collinearity issues.

Shapiro-Wilk normality test

Table 4 below shows the results of the normality test conducted with the use of the Shapiro-Wilk Normality Test.

Variable	obs	W	v	z	Prob>z
Residual	98	0.93608	5190	3.649	0.00013

Source: Researcher's Computation using STATA 15 software, 2022

Table 4 displays the probability values of the residuals, indicating that they are not normally distributed. This observation is reinforced by the normal distribution curve depicted in Figure 2. Such findings suggest a violation of one of the fundamental assumptions of linear regression analysis. To address this issue, the study employed the robust regression technique, as recommended by Gujarati (2003), to mitigate the impact of non-normality in the residuals and ensure the reliability of the analysis results.

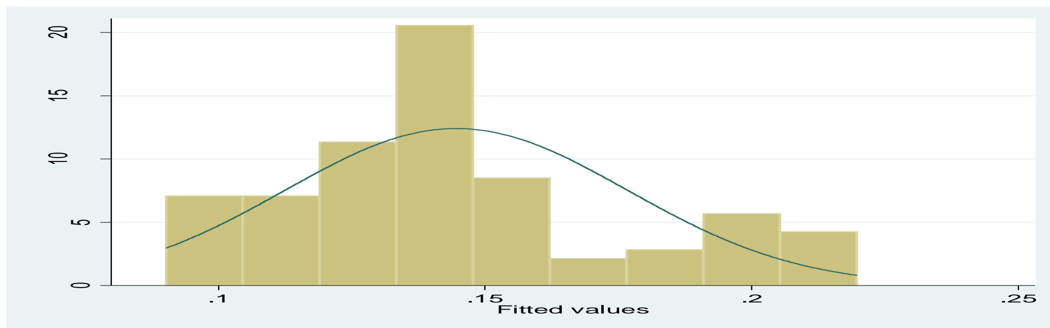

Fig. 2 Normal Distribution Curve

Variance inflator factor (VIF) results

Table 5 Variance Inflator Factor (VIF)

Variable	VIF	I/VIF
FSZ	1.17	0.852186
BI	1.13	0.887497
BGD	1.11	0.903301
BSZ	1.08	0.923892
Mean VIF	1.12	

Source: Researcher's Computation using STATA 15 software, 2022

To further assess the absence of multicollinearity issues among the exogenous variables, a collinearity diagnostics test was conducted. The Variance Inflation Factors (VIF) and the Inverse Variance Inflation Factors (1/VIF) values were examined, indicating no multicollinearity problem within the data. Specifically, their values were found to be less than 10 and 1 respectively, as outlined by Gujarati (2003), as presented in Table 5. These findings suggest that the variables were judiciously selected and appropriately fit within the same regression model. The absence of multicollinearity is crucial for ensuring the reliability of regression analysis, and the results herein affirm the suitability of the model for further analysis.

Heteroscedasticity test

Table 6 Heteroscedasticity test

Type of test	Chi2	P-Value
Heteroscedasticity Test	4.66	0.0309

Source: Researcher's Computation Using STATA 15 software, 2022

To assess the robustness of the data for this study, A heteroscedasticity test was performed. The results showed heteroscedasticity in the data, demonstrating that the basic linear regression technique is still trustworthy. This conclusion is corroborated by the findings in Table 6, where the heteroskedasticity test resulted in a chi-squared value of 4.66 and a corresponding p-value of 0.0309. The presence of heteroscedasticity shows a failure of one of the basic linear regression assumptions, namely homoskedasticity, which assumes constant error variance. Despite this violation, the basic linear regression model is still appropriate for the analysis at hand.

Breusch-pagan lagrangian multiplier test

Table 7 below presents the result of the Breusch-Pagan Lagrangian Multiplier test conducted.

Variable	Chibar2	P-Value
CETR	123.29	0.0000

Source: Researcher's Computation using STATA 15 software, 2022

Based on the results of the Random Effect Model (REM) regression, a Breusch-Pagan Lagrangian Multiplier test was conducted to determine the suitability of the Random Effect Model compared to Pooled Ordinary Least Square Regression. The test results, as presented in Table 7, indicate a chi-squared value of 123.29 with a probability of 0.00. These findings suggest that the Random Effect Model is more appropriate than Pooled Ordinary Least Square Regression. The significant chi-squared value and low probability indicate that the data's characteristics align more closely with the assumptions of the Random Effect Model. Therefore, the REM regression method is deemed more suitable for the analysis at hand.

Hausman Specification Test

Table 8 below presents the result of a Hausman specification test.

Chi2	0.75
Prob. Chi2	0.9450

Source: Researcher's Computation using STATA 15 software, 2022

The dataset utilized in this study comprises panel data, which can potentially result in a clustered and correlated error term over time. This arises due to the presence of entity-specific characteristics within each deposit money bank, leading to unobserved heterogeneity. Such factors could introduce bias into both the outcome variable and the explanatory variables. Therefore, it is crucial to control these effects. To address this issue, the Hausman test was conducted to determine whether the Random Effect Model (REM) or the Fixed Effect Model (FEM) is more appropriate. The results, presented in Table 8, indicate a chi-squared value of 0.75 with a p-value of 0.9450. These values are not statistically significant at any level of significance, as suggested by Hoechle (2007). Thus, based on the Hausman test results, it is determined that the Random Effect Model is more suitable for this analysis. The insignificant chi-squared value and p-value suggest that the unobserved heterogeneity is not a significant concern in this context, supporting the use of the Random Effect Model for the regression analysis.

Board characteristics and cash effective tax rate using robust random effect model (REM)

Table 9 below is the robust random effect regression model conducted.

Variable	Coefficients	z-value	Prob.
Cons.	0.301681	0.64	0.521
BI	0.0019027	0.04	0.968
BSZ	0.0024763	0.99	0.322
BGD	0.2534031	2.25	0.024
FSZ	-0.0278588	-0.53	0.594
R-sq overall	0.5960		
Wald chi2	17.04		
Prob. > chi2	0.0019		

Source: Researcher's Computation using STATA 15 software, 2022

As depicted in Table 9, around 60% of the variation in the cash effective tax rate (CETR) is accounted for by the collective influence of board independence (BI), board size (BSZ), board gender diversity (BGD), and firm size (FSZ), as indicated by the Overall R-squared value of 0.5960. This suggests that the model utilized in the study is adequately fitting, and the independent variables are effectively combined and utilized. Furthermore, the Wald chi-squared value of 17.04 with a corresponding p-value of 0.0019 signifies that the model is statistically significant. This implies that the independent variables collectively contribute significantly to explaining the variation in the cash effective tax rate. Thus, the model is deemed appropriate and robust for the study at hand.

TEST OF HYPOTHESES

A robust random effect regression model was used to explore hypotheses about the impact the board qualities on tax aggressiveness among Nigeria's listed deposit money institutions.

According to Table 9, the z-value of 0.04 and the associated p-value of 0.968 suggest that board independence (BI) has no significant positive influence on the cash effective tax rate (CETR) of Nigerian listed deposit money banks during the study period. As a result, the null hypothesis one, which states that board independence (BI) has no substantial effect on the cash effective tax rate (CETR) of Nigeria's quoted deposit money banks, is accepted. This shows that board independence (BI) is expected to raise the cash effective tax rate (CETR) of Nigeria's quoted deposit money banks by 0.0019027.

Moreover, the results from Table 9 reveal that the z-value of 0.99 and the accompanying p-value of 0.322 suggest that board size (BSZ) has an insignificant positive effect on the cash effective tax rate (CETR) of quoted deposit money banks in Nigeria over the period under consideration. Thus, null hypothesis two, which states that board size (BSZ) has no significant effect on the cash effective tax rate (CETR) of quoted deposit money institutions in Nigeria, is accepted. As a result, board size is expected to increase the cash effective tax rate (CETR) of quoted deposit money banks in Nigeria by 0.0024763.

Additionally, Table 9 demonstrates that the z-value of 2.25 and the associated p-value of 0.024 suggest that board gender diversity (BGD) has a significant effect on the cash effective tax rate (CETR) of quoted deposit money banks in Nigeria during the period under consideration. As a result, null hypothesis three, which states that board gender diversity (BGD) has no significant effect on the cash effective tax rate (CETR) of Nigeria's listed deposit money banks, is rejected. This suggests that board gender diversity is expected to raise the cash effective tax rate (CETR) of Nigeria's listed deposit money banks by 0.2534031.

DISCUSSION OF FINDINGS

This study finds that board independence had an insignificant positive influence on the cash effective tax rate of Nigerian quoted deposit money banks over the time studied. This shows that board independence (BI) is expected to raise the cash effective tax rate (CETR) of Nigeria's quoted deposit money banks by 0.0019027. Contrary to the researcher's initial anticipation, this finding contradicts the expected conclusion, which was that board independence would cut the cash effective tax rate of quoted deposit money banks in Nigeria. Furthermore, this finding contradicts the predictions of agency theory, which states that higher levels of effective corporate governance, such as board independence, are related

to lower levels of aggressive tax measures by management. However, the minor positive effect of board independence (BI) on the cash effective tax rate (CETR) of Nigerian listed deposit money banks is consistent with the findings of Imuetinyan et al. (2023) and Luai et al. 2019. However, it contradicts the conclusions of Ogbeide and Peter (2020) and Shelly et al. (2018).

The study also discovered that board size had no significant positive effect on the cash effective tax rate of quoted deposit money banks in Nigeria during the study period. This suggests that increasing board size is anticipated to increase the cash effective tax rate (CETR) of Nigerian quoted deposit money banks by 0.0024763. This result differs from the researcher's initial predictions, as board size was expected to reduce the cash effective tax rate of quoted deposit money institutions in Nigeria. Furthermore, this finding defies the concepts of agency theory, which holds that higher levels of effective corporate governance, such as board size, are associated with fewer aggressive tax measures by management. This concept is contradicted by the fact that board size (BS) has no substantial positive effect on the cash effective tax rate (CETR) of Nigerian quoted deposit money banks. However, it is worth noting that this discovery is consistent with prior research by Bosun-Fakunle et al. (2018), Malgit and Kanang (2023), and Uchendu et al. (2016). Nonetheless, it differs from the findings of Agustina et al. (2018) and Onatuyeh and Odu (2019).

The study also discovered that board gender diversity has a significant effect on the cash effective tax rate of quoted deposit money banks in Nigeria throughout the period under consideration. This suggests that increased board gender diversity is connected with a 0.2534031 increase in the cash effective tax rate (CETR) of Nigeria's listed deposit money banks. Contrary to the researcher's initial predictions, this data indicates that board gender diversity has a beneficial impact on the cash effective tax rate of quoted deposit money institutions in Nigeria. Furthermore, it differs from the upper-echelon theory's predictions, which provide light on how the personal traits, experiences, and values of top executives, particularly those on the board of directors, might influence a company's tax aggressiveness. However, Amin (2017), Uniamikogbo et al. (2019), and Uniamikogbo, Bennee, and Sunday (2019) all found that board gender diversity had a significant favourable effect on the cash effective tax rate of quoted deposit money institutions in Nigeria. However, it contradicts the conclusions of Malgit and Kanang (2023) and Prasetyo (2019).

CONCLUSION

The large board size boosts tax aggression in Nigerian deposit money institutions. A large board made up of people from various backgrounds may take longer to deliberate on crucial decisions impacting the organization, increasing the level of tax aggressiveness in Nigerian deposit money institutions. The board, which is dominated by non-executive directors and has little input from executive directors, would exacerbate tax evasion in Nigerian deposit money banks. A board with a large share of independent directors will enhance the level of aggressive tax activity, causing an image problem for the organization and increasing tax penalties and fines from the relevant tax authorities. The amount of women on boards has a significant impact on the level of tax aggressiveness in deposit money banks. Women are known to be more liberal in their dealings than males are. More women on the boards of Nigerian deposit money institutions will undoubtedly enhance tax aggression.

Based on the above conclusion, the following recommendations are proffered:

i. To improve decision-making and prevent tax evasion, Nigerian deposit money banks should have a small board of five knowledgeable tax professionals. This is to ensure that tax decisions are made on time by professionals with extensive tax experience.
ii. To combat tax avoidance, Nigerian deposit money banks should have an equal number of non-executive and executive directors on their boards. This is to ensure that tax choices are decided with participation from both executive and non-executive directors, with no one group having a disproportionate influence.
iii. To reduce tax aggression, Nigerian deposit money banks should include at least one-third of female directors on their boards. To lessen tax aggressiveness at Nigeria's deposit money banks, women should have extensive tax experience.

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DECLARATION OF CONFLICT

The authors declare that they have no known competing financial interest or personal relationships that could have appeared to influence the work reported in this paper.

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