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EMPIRICAL ASSESSMENT OF THE DETERMINANTS OF TAX AGGRESSIVENESS IN LISTED FIRMS IN NIGERIA

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Abstract

The study examined the determinants of tax aggressiveness in firms that are listed in the Nigerian Stock Exchange Group. The objective of this investigation was to examine various corporate factors or variables that influence tax aggressiveness in Nigerian firms. The theoretical anchorage of the study was on the agency, resource dependence and behavioral decisions theories. The study employed firm size, board gender diversity, profitability and leverage as the independent variables, while tax aggressiveness was measured using effective tax rate. The study employed the use of secondary data obtained from the 39 listed non financial firms on the Nigerian Exchange Group (NXG) from 2013 – 2022, spanning through 10 years period. The data were analyzed using the descriptive statistics, inferential statistical tools and ordinary least square (OLS) regression was used in testing the study hypotheses. The research investigation revealed that firm size, board gender diversity, profitability and leverage have insignificant effect on tax aggressiveness of listed firms in Nigeria. The study concluded that these variables are collectively or individually cannot influence tax aggressiveness in Nigeria. The study recommended that firms seeking responsible tax strategies should concentrate on long-term sustainability, ethical practices, and prudent leverage management, while considering the potential benefits of diverse board composition and professional tax advice.

Keywords: *Firm size, Board gender diversity, Profitability, Leverage.*

1.1 Introduction

In the intricate dance between corporate ambition and public responsibility, tax strategies often occupy a center stage. While maximizing shareholder value is a fundamental corporate objective, the means employed to achieve it must navigate the ethical and legal terrain of tax compliance. In this context, the concept of tax aggressiveness emerges as a potent point of inquiry,

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particularly within the evolving landscape of Nigeria's financial ecosystem.

Tax aggressiveness, broadly defined as the utilization of legal but intricate maneuvers to reduce tax liabilities, has garnered significant attention in recent years. This heightened focus stems from its potential impact on both the stability of government revenue streams and the level playing field for businesses. In Nigeria, where the quest for economic diversification and fiscal sustainability is paramount, understanding the determinants of tax aggressiveness among listed firms becomes a vital undertaking (Ifeyinwa & Otusanya, 2022; Oyeleke, Erin & Emeni, 2016; Ogbeide & Iyafekhe, 2018).

Several factors are posited to influence a firm's propensity towards tax aggressiveness. One prominent contender is firm size. Larger firms, with their access to sophisticated tax planning resources and expertise, might be more adept at exploiting legal loopholes and engaging in aggressive strategies. Studies like Ogbeide and Iyafekhe (2018) lend credence to this notion, highlighting the positive correlation between firm size and tax aggressiveness in Nigeria. However, this relationship remains nuanced, as internal governance structures and industry-specific regulations can play moderating roles (Michael & Udeh, 2019).

Corporate governance practices also emerge as potential determinants. The composition and effectiveness of boards of directors, for instance, are believed to influence tax aggressiveness. Studies like Rawiwan (2013) suggest that stronger independent directorships and robust risk management frameworks can incentivize more responsible tax behavior. Conversely, weak corporate governance structures might enable opportunistic tax strategies.Furthermore, profitability and financial leverage have been identified as potential drivers of tax aggressiveness. Highly profitable firms might be more inclined to indulge in aggressive tax planning to maintain profit margins, while highly leveraged firms might resort to such strategies to improve short-term cash flow and appease creditors (Ribeiro, Corqueira & Brandao, 2015).

Finally, the industry and institutional conditions within which firms interact plays a crucial role. Weak legal frameworks, inefficient tax administration, and limited public scrutiny can create fertile ground for tax aggressiveness to flourish (Salaudeen & Ejeh, 2018). Conversely, robust regulatory systems and strong anti-avoidance measures can deter aggressive strategies and promote greater tax compliance. For example, the Nigerian scenario has ongoing efforts to strengthen tax administration and combat tax evasion offer glimpses of a promising future (Babatunde, Ibukun & Oyeyemi, 2017).

Understanding the complex interplay of these factors is crucial for formulating effective policy responses and promoting responsible tax behavior among listed firms in Nigeria. This study aims to contribute to the existing body of literature by delving deeper into the determinants of tax aggressiveness within the Nigerian context. By employing rigorous empirical analysis and drawing upon relevant theoretical frameworks, this research seeks to shed light on the nuanced factors shaping tax strategies and informing policy interventions that foster a more equitable and sustainable tax landscape for Nigeria.

The study tends to address the following specific objectives;

i. To examine the effect of firm size on tax aggressiveness of listed firms in Nigeria.
ii. To ascertain the relationship between board gender diversity and tax aggressiveness of listed firms in Nigeria.
iii. To determine the effect of profitability on tax aggressiveness of listed firms in Nigeria.
iv. To examine the relationship between leverage and tax aggressiveness of listed firms in Nigeria.

2.1. Literature review

2.1.1. Tax Aggressiveness

Within the Nigerian economic landscape, tax aggressiveness has emerged as a complex and ever-evolving phenomenon, with profound implications for both corporate profitability and national revenue generation. While the pursuit of legitimate tax minimization strategies is a fundamental aspect of corporate financial management, tax aggressiveness transcends this by pushing the boundaries of legal and ethical tax optimization, often resorting to intricate, and at times dubious, tactics to minimize tax liabilities (Aumeerun, Jugurnath & Soondrum, 2016).

Central to understanding tax aggressiveness is the distinction between tax avoidance and tax evasion. Tax avoidance, though controversial, operates within the confines of the legal framework, exploiting loopholes and ambiguities in tax codes to reduce tax burdens (Ugbogbo, Omoregie & Equavoen, 2019). Conversely, tax evasion involves deliberate actions to misrepresent financial information or conceal income to escape taxation altogether, constituting a blatant breach of the law (Abubakar, 2017). Tax aggressiveness encompasses both, blurring the lines between legitimate optimization and outright illegality, making it a crucial area of inquiry for financial researchers and policymakers alike.

The motivations behind tax aggressiveness in Nigeria are multi-faceted. A prominent factor is the pursuit of short-term profitability, often driven by intense competition and pressure to meet shareholder expectations (Ifurueze John-Akamelu & Iyidiobi, 2018). Additionally, weak corporate governance practices, characterized by limited independent oversight and inadequate internal controls, create fertile ground for aggressive tax schemes to flourish (Ibobo & Ogbodo, 2023). Furthermore, the complexities and inefficiencies of the Nigerian tax system, riddled with ambiguities and loopholes, provide ample opportunities for exploitation by corporations equipped with sophisticated tax planning strategies (Aumeerun, Jugumath & Soondrum, 2016).

The ramifications of tax aggressiveness extend far beyond individual companies, impacting government revenues and ultimately hindering national development. The erosion of the tax base through aggressive practices directly translates to reduced government coffers, leading to underinvestment in critical public infrastructure, education, and healthcare. This disproportionately affects vulnerable segments of the population who rely heavily on government services, exacerbating existing inequalities and perpetuating the cycle of poverty (Babatunde et al., 2017). Moreover, the perception of unfairness and lack of accountability fostered by tax aggressiveness can undermine public trust in institutions and discourage future tax compliance, further exacerbating the revenue shortfall (Abdul & Wang'ombe, 2018).

Navigating this complex landscape necessitates a multi-pronged approach. Strengthening corporate governance structures, enhancing tax administration efficiency, and promoting responsible tax compliance practices through awareness campaigns are crucial

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steps towards mitigating the negative impacts of tax aggressiveness (Abdul F. & Wang'ombe, 2018). Simultaneously, fostering a culture of ethical business practices and transparency within the corporate sector can contribute to building trust and strengthening the social contract between businesses and citizens. By addressing the root causes and consequences of tax aggressiveness, Nigeria can build a more equitable and sustainable tax system that supports both corporate growth and societal well-being.

2.1.2. Firm Size

Understanding the dynamics of firm size in Nigeria is crucial for navigating the country's complex economic landscape. Firm size, often measured by employee count, revenue, or asset volume, serves as a critical metric for gauging a company's economic footprint, resource allocation, and potential impact on various stakeholders (Ribeiro, Corqueira & Brandao, 2015). In Nigeria, the spectrum of firm size ranges from micro-enterprises employing fewer than 10 individuals to large corporations contributing significantly to the national GDP (Ugbogbo, Omoregie & Eguavoen, 2019). Each size category embodies unique characteristics and presents distinct opportunities and challenges for both the internal operations of the firm and its interaction with the wider economic ecosystem.

The association tax aggressiveness and firm size has been a subject of intense debate among scholars and policymakers. Empirical evidence in Nigeria suggests a complex and nuanced dynamic. Larger firms are more likely to engage in aggressive tax planning strategies. This can be attributed to their greater access to sophisticated tax advisors, specialized tax planning departments, and financial resources to exploit loopholes and ambiguities in the Nigerian tax system (Ogbeide & Iyafekhe, 2018). Studies like Ogbeide (2017) also support this notion, highlighting a positive correlation between firm size and tax aggressiveness in Nigeria.

However, it is important to note that firm size alone does not necessarily translate into aggressive tax behavior. Robust corporate governance practices can act as a mitigating factor, deterring companies from engaging in overly aggressive tax strategies. Mappadang et al. (2018) and Odoemela et al. (2016) found that firms with a higher proportion of independent directors on their boards exhibited lower levels of tax aggressiveness. Similarly, Ogbeide and Osaretin (2018) emphasize the role of strong corporate governance mechanisms in promoting responsible tax practices. This suggests that internal controls, transparency measures, and effective board oversight can effectively counter the potential for aggressive tax strategies, regardless of a firm's size.

2.1.3. Leverage

Leverage, the utilization of debt financing to amplify returns on investment, stands as a double-edged sword for Nigerian businesses. While it offers access to capital beyond a company's own resources, potentially propelling growth and expansion, it also introduces a heightened level of financial risk. Navigating this delicate balance is crucial for Nigerian firms seeking to maximize shareholder value without jeopardizing their long-term sustainability (Ilaboya, Obasi & Izevbekhai, 2016; Ogbeide, 2017; Ribeioro, 2015)

The interplay between leverage and tax aggressiveness has garnered increasing attention in recent years. High debt levels can incentivize firms to engage in aggressive tax planning strategies to reduce interest expenses and boost short-term profitability. This could involve exploiting loopholes in tax codes, transferring debt obligations to shell companies, or engaging in complex financial engineering practices to minimize tax liabilities (Akanksha, Jayant & Constanza, 2013; Ogbeide, 2017).

However, the relationship is not always so direct. Higher leverage can paradoxically lead to reduced tax aggressiveness for some firms. This could be attributed to increased scrutiny from lenders, who demand stricter adherence to financial reporting standards to maintain creditworthiness (Ilaboya, Obasi & Izevbekhai, 2016; Ribeiro, 2015). Additionally, a robust corporate governance framework with independent oversight and strong stakeholder engagement might act as a deterrent to overly aggressive tax practices, regardless of a firm's leverage level (Hairul, Ibrahim & Siti, 2014).

2.1.4. Profitability

Profitability stands as the lifeblood of any business, and in the dynamic market landscape of Nigeria, its pursuit takes on multifaceted dimensions. Measuring profitability encompasses various metrics, including return on equity (ROE), return on assets (ROA), and profit margin, each offering insights into a company's efficiency, financial health, and ability to generate shareholder value. High profitability indicates optimal resource allocation, effective operations, and a competitive edge, enabling companies to reinvest in growth initiatives, attract investment, and contribute to the broader economic well-being (Ekanola & Ajayi, 2023).

However, the path to profitability in Nigeria is paved with both opportunities and challenges. A vibrant entrepreneurial spirit and increasing consumer demand present fertile ground for businesses to flourish. Nevertheless, factors like infrastructure shortcomings, complex bureaucracy, and volatile economic conditions can impede profitability, demanding strategic resilience and adaptable financial management (Ilaboya, Obasi & I. Companies must strike a delicate balance between generating profits and navigating a dynamic and often unpredictable environment, requiring agile decision-making and a keen understanding of market trends.

The relationship between profitability and tax aggressiveness in Nigerian firms remains a subject of ongoing debate and investigation. Certain studies, such as Owolani et al. (2022), propose a potential negative correlation, suggesting that highly profitable companies may have less need to engage in aggressive tax practices due to sufficient cash flow generation from core operations. This can be further emphasized by firms operating in stable and predictable sectors with well-established business models.

However, a contrasting perspective emerges from research by Ekanola and Ajayi (2023), which highlights the possibility of a positive, albeit nonlinear, relationship between profitability and tax aggressiveness. Under this lens, highly profitable firms, particularly those experiencing rapid growth, might resort to aggressive tax strategies to maximize short-term returns and sustain investor expectations. This could involve exploiting tax loopholes, manipulating transfer pricing schemes, or utilizing complex financial instruments to reduce tax liabilities.

2.2. Theoretical Framework

One pertinent lens through which to view tax aggressiveness is agency theory. This theory posits that managers, acting as agents for shareholders, prioritize maximizing firm value. In certain contexts, aggressive tax strategies can appear attractive if they generate short-term profitability and boost shareholder returns, even if they raise ethical concerns or pose reputational risks. This

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aligns with findings by Ogbeide and Iyafekhe (2018) in Nigeria, where pressure to meet shareholder expectations emerged as a key driver of tax aggressiveness.

However, agency theory alone presents an incomplete picture. Behavioral decision theory offers additional insights by focusing on the cognitive biases and heuristics that influence decision-making under uncertainty. This theory suggests that even with strong corporate governance, managers may succumb to biases such as overconfidence or loss aversion, leading them to overestimate the benefits and underestimate the risks of aggressive tax practices. Research by Ekanola and Ajayi (2023) in Nigeria supports this perspective, highlighting the role of short-term performance pressures in driving aggressive tax strategies.

The proposed framework must not only understand the motivations behind tax aggressiveness but also consider the factors that can mitigate its prevalence. Resource dependence theory emphasizes the interdependencies between firms and their external environment, including regulatory bodies, investors, and the broader community. This theory suggests that firms operating in an environment with robust regulatory oversight, strong stakeholder pressure for ethical conduct, and a culture of tax compliance are less likely to engage in aggressive practices. This aligns with Okoroafor and Okoye (2022) findings in Nigeria, where strong corporate governance mechanisms were found to deter tax aggressiveness.

Understanding the motivations behind aggressive tax practices through agency and behavioral decision theories is crucial for crafting effective countermeasures. Additionally, incorporating resource dependence theory can guide the development of regulatory frameworks that leverage external pressures and incentives to promote a culture of responsible tax compliance. By acknowledging the intricate web of factors influencing tax aggressiveness, Nigeria can move towards a sustainable and equitable tax system that fosters both economic growth and corporate responsibility.

2.3. Empirical Review

Oyenike and Olayinka (2016) investigated the link between female board membership and tax aggressiveness in Nigerian banks listed on the NSE. Using cross-sectional time-series data analyzed with SPSS 21, the study reveals a weak positive but statistically insignificant association between the proportion of female directors and tax aggressiveness. Interestingly, the interaction of board size with female representation does show a significant connection with reduced tax aggressiveness. These findings align with the "women risk aversion" theory, suggesting women's risk-averse nature might translate into more conservative corporate decisions, including less aggressive tax practices. However, the study acknowledges the limited impact of female presence due to their low representation in executive and board positions. Therefore, the study recommends encouraging or even mandating banks to appoint more women to board positions to harness their potential positive influence on corporate tax practices.

Ogbeide (2017) investigated the link between firm characteristics and tax aggressiveness, focusing on listed companies in Nigeria from 2012 to 2016. Drawing data from annual reports and employing both panel and dynamic analysis methods, it unveiled several intriguing relationships; larger firms were more aggressive in minimizing their tax burdens. Companies with high-quality external audits also exhibited higher tax aggressiveness, hinting at potential legal optimization strategies. While taking on more debt initially decreased tax aggressiveness, the associated interest charges counteracted this effect, driving the rate back up. Based on these insights, the study recommends a strategic approach for Nigerian listed firms: adequately and appropriately compensate managers and board members. This, the research suggests, could incentivize ethical decision-making, reduce rent-seeking behavior, and mitigate agency problems. Ultimately, such practices could lead to improved operational efficiency and, potentially, lower effective tax rates.

Salaudeen and Ejeh (2018) investigated how ownership structure in Nigeria affects listed firms' tax aggressiveness from 2010 to 2014. Analyzing data from 40 non-financial firms, the researchers examined the relationships between ownership concentration, managerial ownership, and tax aggressiveness. Their model also considered control variables like leverage, return on assets, and firm size. Interestingly, while ownership concentration slightly increased tax aggressiveness, the effect was statistically insignificant. In contrast, managerial ownership, where managers hold a larger stake, significantly reduced tax aggressiveness. This implies that in Nigeria, only the type of ownership – managerial versus dispersed – meaningfully influences how aggressively firms pursue tax minimization strategies. Higher leverage discourages tax aggressiveness, likely due to increased scrutiny from lenders. Better profitability (measured by return on assets) is linked to higher tax aggressiveness, although the study doesn't delve into why. Firm size itself didn't significantly impact tax aggressiveness.

Ogbeide and Iyafekhe (2018) examined the tax strategies of non-financial firms listed on the Nigerian Stock Exchange. Examining a sample of 85 companies from 2012 to 2016, it explores the prevalence and degree of tax aggressiveness, defined as employing legal strategies to minimize tax payments. The analysis revealed a diverse landscape; 26 firms (31%) actively implemented strategies to significantly lower their tax burden. 13 firms (15%) exhibited some degree of tax minimization tactics. 16 firms (19%) balanced tax compliance with potential savings, striking an equilibrium. 30 firms (35%) adhered to standard tax practices without employing aggressive minimization strategies. In light of these findings, the study recommends that companies staffed with experienced tax professionals, these departments can optimize tax strategies within legal boundaries, potentially minimizing tax liabilities. Hiring and retaining qualified auditors and tax specialists can ensure firms navigate the complexities of tax regulations and implement effective strategies.

Ifurueze, John-Akamelu and Iyidiobi (2018) examined intricate relationship between corporate tax strategies and firm growth in Nigeria's food production industry. Examining two key approaches: leverage tax aggressiveness (using debt to lower taxable income) and effective tax rate aggressiveness (reducing actual tax payments), the research found contrasting results. While leverage had a positive impact on growth, it wasn't statistically significant, suggesting a potential, but unsubstantiated, link. Conversely, effective tax rate aggressiveness emerged as a statistically robust driver of growth, highlighting the potential benefits of legal tax optimization for Nigerian food producers. This implies that while both strategies offer avenues for growth, only the latter provides a reliable and statistically validated path forward.

Michael and Udeh (2019) examined the impact of corporate governance on tax aggressive behavior (TAG) in 35 listed

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manufacturing companies in Nigeria from 2008 to 2018. Using panel regression analysis, the study revealed intriguing findings a larger board (BDS) surprisingly increased tax aggressiveness, though only marginally significant (p=0.06). Conversely, a higher proportion of independent directors (BDIND) significantly reduced tax aggressiveness (p=0.000), suggesting independent oversight curtails aggressive tax practices. Interestingly, a greater number of female directors on the board (BGD) significantly increased tax aggressiveness (p=0.007), implying that gender diversity might play a complex role in tax optimization strategies. Based on these findings, the study recommends that companies prioritize building high-quality corporate governance systems, focusing on both composition (board size, independence, diversity) and effectiveness in guiding ethical and transparent tax practices.

Ugbogbo and Omoregie (2019) examined into corporate aggressive tax avoidance (CTA) in Nigeria, specifically how profitability (PROF), firm size (FSIZE), and leverage (LEV) influence its occurrence. Using data from 40 Nigerian companies listed on the Stock Exchange during 2013-2017 and employing OLS regression analysis, the research revealed that larger firms (high FSIZE) engage in more CTA. More profitable (high PROF) and leveraged (high LEV) firms engage in less CTA. These findings highlight the significant role these factors play in CTA within the Nigerian context. Consequently, the study urges all stakeholders, particularly those in Nigeria, to pay closer attention to PROF, FSIZE, and LEV when examining the drivers of corporate tax aggressiveness.

Ifeyinwa and Otusanya (2022) investigated how firm characteristics influence tax aggressiveness in Nigerian non-financial firms from 2013 to 2020. Analyzing data from 30 listed companies, the researchers assessed the impact of four factors: operating cash flow ratio, debt-to-assets ratio, firm size, and capital intensity, on tax aggressiveness, measured by the cash effective tax rate (CETR). They found that operating cash flow positively and significantly affects CETR, suggesting firms with more readily available cash tend to be more tax aggressive. Debt-to-assets ratio and capital intensity negatively influence tax aggressiveness, but not significantly. This implies financial leverage and reliance on physical assets might discourage aggressive tax strategies, though the effect requires further investigation. Firm size had a positive but statistically insignificant impact, suggesting its role in tax aggressiveness is unclear. These findings reveal that operating cash flow stands out as the primary driver of tax aggressiveness in this context. The study recommends that companies manage their tax practices responsibly, considering both societal impact and corporate risk associated with aggressive tactics. Policymakers and corporations, the study argues, should take these findings into account to incentivize transparent and ethical tax behavior.

Adela, Agyei and Peprah (2023) examined the factors influencing aggressive tax behavior by listed non-financial firms in Ghana from 2010 to 2019. Using data from 19 firms, the study finds that political connections and financial constraints are key drivers of tax aggressiveness. While the impact of capital structure is mixed, surprisingly, good corporate governance practices like board size, gender diversity, and independent directors seem to be associated with increased tax aggressiveness in this context. The study recommends policymakers analyze and strengthen internal corporate governance within listed firms to curb tax aggressiveness and boost government revenue. Additionally, evaluating external governance factors like institutional ownership and ownership structures could further discourage aggressive tax behavior from firms in Ghana.

Ibobo and Ogbodo (2023) examined the impact of "earnings management," specifically the manipulation of accruals, on the financial performance of manufacturing firms between 2012 and 2021. Analyzing data from 21 companies, the research examines how adjusting accruals affects several key performance indicators: returns on assets, equity, shares, and profit margin. Using both descriptive and inferential statistical methods, the study reveals a surprising finding: firms employing accrual-based earnings management actually show improved financial performance across all four metrics. This suggests that, within the Nigerian context, strategic adjustments to accruals can positively impact a company's financial picture. While further research is needed to understand the long-term implications and ethical considerations of such practices, this study sheds light on an intriguing relationship between earnings management and financial performance in a specific market.

3.1. Research Methodology

This study used an *ex-post facto* research design to examine the corporate determinants of tax aggressiveness of listed Nigerian non-financial firms. The study selected 40 listed non-financial companies from the Nigerian Exchange Group from 2012 to 2022. The independent variables employed in this study are firm size, leverage, profitability and board gender diversity. The dependent variable is tax aggressiveness. The data analysis tools employed are descriptive statistics (mean, standard deviation, minimum, maximum, skewness and kurtosis), a correlation matrix, diagnostic tests (variance inflation factor (VIF) and Breusch and pagan lagrangian multiplier test) to ensure the robustness of the data. Finally, the study used Ordinary Least Square (OLS) regression to identify the most suitable regression model and to assess the impact of the independent variables on the dependent variable.

3.2. Model Specifications

$TAX = f(FSIZE, LEV, PROF \& BDGV)$ - - *Eqn 1*

$TAX_{it} = a_{0it} + a_1 FSIZE_{it} + a_2 LEV_{it} + a_3 PROF_{it} + a_4 BDGV_{it} + U_t$ - *Eqn 2*

Table 1: Measurement of Variable

Variables	**Symbols**	**Measurement**
Tax Aggressiveness	TAX	Measured using Effective Tax Rate (ETR) of firm *i* in year *t*.
Firm Size	FSIZE	Measured using the log of Total Assets of firm *i* in year *t*.
Leverage	LEV	Measured using Debt-to-Equity Ratio of firm *i* in year *t*.
Board Gender Diversity	BDGND	Measured using the percentage of Female Directors on Board of the firm *i* in year *t*.
Profitability	PROF	Measured by Return on Assets (ROA) of firm *i* in year *t*.

Source: Author's Compilation, 2023.

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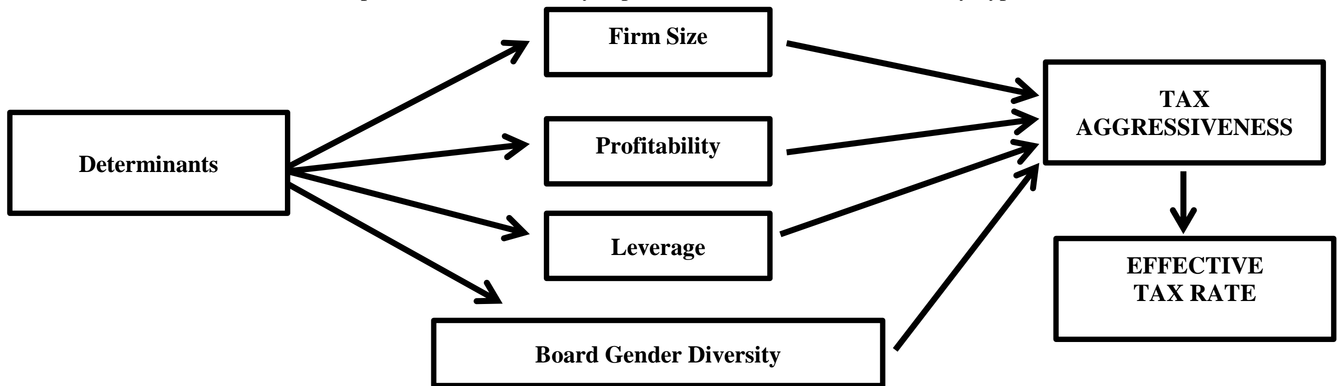
Conceptual Framework

The conceptual model of the study is presented in accordance to the study hypothesis.



4.1. Data Presentation

4.1.1. Description Statistics

Table 2: Summary of Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
TAXG	390	3.9933	3.5457	0	26.369	2.2582	10.7574
FSIZE	390	7.1718	0.7752	5.07	8.7617	0.1785	2.4774
BGDV	390	14.0057	13.5451	0	100	1.2345	6.7204
PROF	390	2.3369	16.6521	-101.4167	176.2669	2.1411	39.4851
LEV	390	-6.9625	160.3875	-3123.057	202.9019	-18.9029	367.2938

Source: Author's Collation, 2023.

Tax Aggressiveness (TAXG) measures the extent to which firms engage in strategies to reduce their tax burden. It has a mean of 3.9933, indicating an overall moderate level of tax aggressiveness in the sample. However, the wide range (0-26.369) and high skewness (2.2582) suggest significant variation among firms, with some being highly aggressive and others not at all.

Firm Size (FSIZE) captures the overall size of a firm, likely measured by total assets or market capitalization. The mean of 7.1718 suggests most firms in the sample are relatively large. The low skewness (0.1785) indicates a fairly even distribution of firm sizes. Board Gender Diversity (BGDV) reflects the representation of women on corporate boards. The mean of 14.0057 suggests an average of 14% female directors, but the high standard deviation (13.5451) and skewness (1.2345) highlight a wide range of diversity levels across firms. Profitability (PROF) measures a firm's financial performance, likely using metrics like Return on Assets (ROA) or Return on Equity (ROE). The mean of 2.3369 suggests overall profitability, but the wide range (-101.4167 to 176.2669) indicates significant variation in financial performance among firms. Leverage (LEV) represents the extent to which a firm uses debt to finance its operations. The negative mean (-6.9625) might suggest low average leverage, but the extreme maximum value (202.9019) and high skewness (-18.9029) indicate some highly leveraged firms in the sample.

4.1.2. Correlation Analysis

Table 3: Correlation Analysis Result

Variable	TAX	FSIZE	BGDV	PROF	LEV
TAX	1.0000				
FSIZE	0.0324	1.0000			
BGDV	0.0177	0.1809	1.0000		
PROF	0.0327	0.0348	0.0532	1.0000	
LEV	0.0425	0.0044	-0.0460	-0.0338	1.0000

Source: Author's Collation, 2023.

TAX and FSIZE maintained a correlation of 0.0324 suggests a weak positive relationship, meaning larger firms might be slightly more tax aggressive. However, the low correlation indicates this trend isn't very pronounced. TAX and BGDV recorded a correlation of 0.0177 is very weak, suggesting board gender diversity has almost no relationship with tax aggressiveness. TAX and PROF maintained a correlation of 0.0327 is also weak, indicating no strong relationship between profitability and tax aggressiveness. TAX and LEV recorded a correlation of 0.0425 is slightly stronger, suggesting a weak positive relationship between leverage and tax aggressiveness. This could mean firms with higher debt levels might engage in slightly more aggressive tax strategies.

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4.1.3. Test of Multicollinearity

Variance Inflation Factor (VIF) Test					
Variables	**BGDV**	**FSIZE**	**PROF**	**LEV**	**Mean VIF**
VIF	1.04	1.03	1.00	1.00	
1/VIF	0.96302	0.96647	0.99551	0.99671	1.02

Source: Author's Collation, 2023

The VIF values for all variables are very low (close to 1), indicating no significant multicollinearity issues. This means the independent variables are not highly correlated with each other, which is essential for reliable regression analysis.

4.1.4. Test of Heteroscedasticity

Breusch and Pagan Lagrangian Multiplier test	
Decision Rule	If p-value is statistically significant, then reject Ho and accept H_A
Result	chi2(1) = 0.95; Prob>chi2= 0.3297

Source: Researcher's compilation, 2023.

Chi-Square Statistic (chi2(1) = 0.95), this value measures the extent to which the model's residuals (errors) exhibit heteroskedasticity, which means non-constant variance. A low chi-square value suggests less evidence of heteroskedasticity. P-value (Prob>chi2 = 0.3297). This indicates the probability of observing a chi-square value as extreme or more extreme than 0.95, assuming no heteroskedasticity. The high p-value (above the common threshold of 0.05) suggests we fail to reject the null hypothesis (Ho) of homoskedasticity, meaning the data doesn't provide strong evidence of heteroskedasticity. The absence of significant heteroskedasticity means standard errors and hypothesis tests based on the model's assumptions are likely reliable. This allows for more confident conclusions about the relationships between variables. Since heteroskedasticity isn't a major concern, there's no need to apply corrective measures like weighted least squares or robust standard errors, simplifying the analysis.

4.2. Hypothesis Testing

The study focused on one dependent variable (TAX), the study adopted the OLS regression analysis in stating the stated hypothesis. The result of the simple regression analysis is displayed below.

Ordinary Least Square (OLS) Regression Analysis

Tax Aggressiveness (TAX)					
Variables	**Symbols**	**Coefficient**	**Std. Err.**	**t-stats**	**p>| t |**
Firm Size	FSIZE	0.13132	0.23663	0.55	0.579
Board Gender Diversity	BGDV	0.00335	0.01357	0.25	0.805
Profitability	PROF	0.00693	0.01085	0.64	0.523
Leverage	LEV	0.00098	0.00113	0.87	0.387
Constant	_cons	2.99519	1.68254	1.78	0.076
Obs.					390
F (4, 385)					0.40
Prob > F					0.8115
R-squared					0.0041
Adj R-squared					-0.0062
Root MSE					3.5567

Source: Researcher's compilation, 2023.

4.3. Discussion of Findings

The positive coefficient suggests a tendency for larger firms to engage in more tax aggressive strategies. However, the insignificance (p-value = 0.579) indicates inconclusive evidence. This finding aligns with some studies supporting a positive link between size and tax aggressiveness (Chen et al., 2010; Frank et al., 2009). They argue that larger firms have more resources to invest in complex tax planning strategies and exploit loopholes (Slemrod & Gupta, 2001). However, other studies contradict this, finding no significant relationship or even a negative one (Guenzel & Neunstadt, 2014; Kim & Park, 2014). Industry specificity and regional context could explain these discrepancies.

The extremely weak and statistically insignificant positive coefficient (p-value = 0.805) suggests minimal influence of board gender diversity on tax aggressiveness. This finding aligns with mixed evidence in existing research. Some studies, like Adams and Ferreira (2007), suggest a positive association between female

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board representation and reduced risk-taking, potentially leading to less aggressive tax strategies. However, others like Ertimur and Watts (2008) find no significant correlation, highlighting the complex interplay of board dynamics and tax decisions. Cultural contexts and industry sectors might further influence this relationship.

The weak positive coefficient (p-value = 0.523) indicates no strong evidence for a connection between profitability and tax aggressiveness. This aligns with studies like Desai and Desai (2007) and Desai et al. (2006), which found no significant relationship. They argue that profitable firms prioritize long-term sustainability and reputation, potentially deterring overly aggressive tax tactics. However, some studies like Dechow et al. (2008) suggest a negative association, where more profitable firms engage in less aggressive tax strategies to avoid scrutiny. Further research exploring specific profitability measures and industry nuances is needed for clearer understanding.

The positive coefficient, though statistically insignificant (p-value = 0.387), hints at a potential link between higher debt levels and increased tax aggressiveness. This aligns with studies like Desai and Desai (2007) and Graham and Tucker (2005), which posit that firms under financial pressure might resort to aggressive tax strategies to boost short-term earnings and appease creditors. However, other studies like Kim and Park (2014) find no significant relationship, suggesting more complex considerations might influence leverage-driven tax decisions.

5.1. Conclusion

The study's exploration of various factors influencing tax aggressiveness among firms highlights the intricate nature of these relationships. The findings, while offering insights into potential connections, also underscore the complexity and variability within these associations. The inconclusive or weak statistical significance across coefficients relating to firm size, board gender diversity, profitability, and debt levels in relation to tax aggressiveness hints at a multifaceted interplay of factors governing tax strategies within organizations.

Firstly, the inconclusive evidence regarding firm size suggests a nuanced relationship between the scale of a company and its tax behavior. While some studies propose that larger firms might leverage their resources for sophisticated tax planning, the insignificant p-value emphasizes the need for a deeper dive into industry-specific and regional contexts. Additionally, undisclosed factors like corporate culture, leadership ethos, and the regulatory environment may intricately mold a firm's tax approach, warranting further investigation to unveil these hidden influencers.

Similarly, the examination of board gender diversity and its purported influence on tax aggressiveness lacks a definitive conclusion. The weak coefficient suggests a minimal impact, yet undisclosed factors such as the socio-cultural dynamics within boards and industry-specific norms might contribute significantly. Understanding the nuanced ways in which diverse boards navigate decision-making processes and their stance on ethical tax practices could shed light on this relationship.

Moreover, the non-conclusive findings related to profitability and debt levels unveil an intricate landscape governing tax strategies. Beyond financial indicators, undisclosed elements like managerial discretion, ethical frameworks within organizations, and public scrutiny might play pivotal roles in shaping a company's approach to taxation. Further exploration into these concealed factors could provide a more comprehensive understanding of the intricate connections between financial metrics and tax behavior.

5.2. Recommendations

While this study's overall model couldn't definitively link specific factors to tax aggressiveness, examining individual variables revealed intriguing hints. Larger firms and those with higher debt levels showed weak tendencies towards more aggressive strategies, though not statistically significant. Conversely, board gender diversity and profitability had minimal apparent influence. These findings suggest that broader factors beyond the studied variables likely play a crucial role in shaping tax aggressiveness. Firms seeking responsible tax strategies should focus on long-term sustainability, ethical practices, and prudent leverage management, while considering the potential benefits of diverse board composition and professional tax advice. Remember, a comprehensive understanding of the complex influences on tax aggressiveness requires further research and ongoing analysis.

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