check for updates

Firm characteristics and tax aggressiveness of quoted companies in Nigeria

ⓘ **Otuedon Ajueyitse Martins**[1+]
ⓘ **Omoye Alade Sule**[2]

[1]*Department of Accounting, Igbinedion University, Okada, Edo State, Nigeria.*
Email: Otuedon.martins@iuokada.edu.ng
[2]*Department of Accounting, University of Benin, Benin City, Nigeria.*
Email: alade.omoye@uniben.edu

(+ Corresponding author)

ABSTRACT

This study examined the firm characteristics of tax aggressiveness among quoted companies in Nigeria. The specific objectives were to determine the influence of firm size, profitability, liquidity and leverage on the tax aggressiveness of firms. It was an ex-post-facto and longitudinal study that spanned five years (2015-2019). The population consisted of 87 non-financial companies while the sample size was 67. The data used were from the financial statements and accounts of the sampled companies. The statistical techniques used include descriptive statistics, correlations and random and fixed effects panel least squares regression. The study showed that firm size and profitability have a significant influence and positive relationship with tax aggressiveness while liquidity has no significant influence on tax aggressiveness but has a positive relationship with it. Leverage had a significant influence while having a negative relationship with tax aggressiveness. It was concluded that firm characteristics are critical factors influencing tax aggressiveness among quoted companies in Nigeria. It recommended that a company's size should not be the basis for tax aggressiveness and that its profitability, liquidity and leverage position be disclosed in a way that accurately reflects its financial status. It will be of immense benefit to companies to ensure that their tax strategies align with ethical and legal standards and that they maintain transparency in their financial reporting. Similarly, the findings of this study have important implications for government tax authorities at both the federal and state levels in terms of the assessment of companies for tax purposes.

Contribution/Originality: This study introduces variables like liquidity about aggressiveness which have not been given adequate attention. The study validates divergence in extant research on this topic after several diagnostic tests. Moreover, it sheds light on the policy implications of firm characteristics on tax aggressiveness among firms in Nigeria.

1. INTRODUCTION

Taxation has a long history as a means of generating revenues for government expenditures. Every manager of a large or small firm is expected to prepare an income statement and financial position of how the taxable income of the preceding year was calculated due to the importance of taxes to the government. The management of corporate organizations explores various means to reduce the payment of the correct tax through tax aggressiveness in the course of preparing annual accounts and financial reports. Tax-aggressive practices involve exploiting loopholes in tax legislation to minimize tax liabilities (Dewi & Yasa, 2020). Positive accounting theory has demonstrated that the management of businesses regardless of size uses various accounting strategies to minimize paying the appropriate

taxes to the government. Understanding how firm characteristics can impact tax aggressiveness emerges as a vital concern. These characteristics encompass various aspects such as company size, turnover, growth prospects, ownership structure, leverage, liquidity, board composition, firm age, dividend distribution, return on assets, audit quality, intangible assets, capital intensity, inventory management, foreign operations, net operating losses, research and development expenditure, operating cash flows, access to capital markets and growth rates in sales and assets as delineated in various existing studies (Obelogu & Olatunde, 2022).

The most challenging issue is tax aggression which significantly impacts government revenue and has caused a lot of issues worldwide. In 2011, Amazon employed tax-aggressive tactics reporting a tax expense of £1.8 million on £3.35 billion in overall sales while Google's UK unit recorded a tax of £6 million on total sales of £395 million (Barford & Holt, 2013). In 2014, the book value of Google Netherlands Holdings revealed that Google executed fund transfers totaling 10.7 billion euros to its subsidiary registered in Ireland, Google Ireland Holdings which is based in Bermuda (Sterling & Bergin, 2016). Moreover, Apple faced accusations of tax aggressiveness for using its subsidiaries based in Ireland, namely Apple Sales International and Apple Operations Europe as a means to evade paying appropriate taxes on its pre-tax profits generated outside of the United States (Taylor, 2016). In Nigeria, allegations surfaced regarding certain oil companies participating in tax-aggressive practices and evasion. Chevron Nigeria Limited was implicated in a $10.8 billion tax avoidance and evasion scheme as reported by ABZ Integrated Limited, tax consultant to the Economic and Financial Crimes Commission (EFCC) in Nigeria (Igbikiowubo, 2005). According to Akande (2005) Nigeria incurred significant revenue losses due to contractor companies lifting the country's crude oil which remained unassessed for tax obligations because of tax aggressiveness. Omoigui (2006) acknowledges that weak and undermined tax administration has resulted in a high level of tax aggressiveness and evasion among firms whether small or large in Nigeria. In 2019, Tunde Fowler, the former Executive Chairman of the Federal Inland Revenue Service (FIRS) stated that Nigeria faces an annual loss of approximately $15 billion due to tax aggressiveness and evasion (Okwe, 2019). In 2020, the Chairman explicitly highlighted that over ten years span from 2007 to 2017, Nigeria incurred losses exceeding ₦5.4 trillion due to the tax aggressiveness and fraudulent activities of both indigenous and multinational corporations operating within the country.

However, studies on firm characteristics concerning tax aggressiveness were mostly conducted in developed countries where tax issues were taken seriously. The results of most research conducted on firm characteristics and tax aggressiveness in Nigeria were either inconclusive or contradicting reporting positive or sometimes negative results, thereby establishing a gap in knowledge for further studies. For instance, Ogbeide (2017) indicated that auditing has a significant and positive effect on tax aggressiveness while leverage shows a significant negative relationship with tax aggressiveness. Ifurueze, John-Akamelu, and Iyidiobi (2018) examined the impact of corporate tax aggressiveness on firm growth and determined that leverage did not exert a significant influence on tax aggressiveness. Uniamikogbo, Atu, and Atu (2018) investigated determinants of tax aggressiveness in deposit money banks in Nigeria and found that firm size and leverage were statistically significant with tax aggressiveness while profitability has no significant effect on tax aggressiveness. Ugbogbo, Omoregie, and Eguavoen (2020) discovered that firm size (FSIZE) exhibits a positive relationship with corporate tax aggressive avoidance (CTA) whereas profitability (PROF) and leverage (LEV) demonstrate negative and statistically significant relationships with corporate tax aggressiveness (CTA). In light of these findings, it becomes evident that the impact of firm characteristics on tax aggressiveness remains uncertain given the inconclusive and contradictory outcomes revealed by the previous studies.

The overarching investigation is: What correlation exists between firm characteristics and tax aggressiveness among non-financial firms in Nigeria? The specific aims of this investigation are to scrutinize the impact of firm size, leverage, liquidity and profitability on the tax aggressiveness of non-financial corporations listed on the Exchange Group in Nigeria (NGX).

2. REVIEW OF RELATED LITERATURE

2.1. Tax Aggressiveness

Tax aggressiveness, alternatively termed "tax planning," "tax avoidance" and "tax shelters" hinges on compliance with the legal and ethical frameworks laid out by tax authorities" (Khurana & Moser, 2013; Lanis, Richardson, & Taylor, 2017). Tax aggressiveness has various conceptualizations and references and is measured in various ways but tends towards the same direction and purpose though it differs in its consequences for firms' health (Boussaidi & Hamed, 2015). Chen, Chen, Cheng, and Shevlin (2010) define tax aggressiveness as an attempt by a firm to decrease taxes. Consequently, it also referred to a reduction in taxable revenue when managed by way of tax planning practices allowed by law and some activities that may be seen as illegal in some situations to decrease tax expense (Chen et al., 2010; Lanis et al., 2017). Boussaidi and Hamed (2015) define tax aggressiveness as a diverse way of managing activities to reduce taxable income which is seen as legal or illegal. Onyali and Okafor (2018) contend that tax aggressiveness constitutes a strategic approach adopted by corporate management encompassing a series of procedures, methodologies, resources and decisions to optimize income after fulfilling all corporate obligations to the state and other stakeholders.

Tax aggressiveness can be assessed through the effective tax rate on accounting profit (Accepted Accounting Principles Effective Tax Rate (GAAP ETR) calculated as total expense with taxes on profit divided by profit before taxes (Accepted Accounting Principles Effective Tax Rate (GAAP ETR)) (Hanlon & Heitzman, 2010). Variations of this measure include the total effective rate (ETRt) and the current effective rate (ETRc) contingent on the consideration of deferred taxation (Guimarães, da Silva Macedo, & Da Cruz, 2016). Consequently, a low GAAP ETR rate suggests that the company is engaging in tax planning or tax aggressiveness.

2.2. Firm Characteristics

2.2.1. Firm Size

Firm size can be defined by various metrics such as the total number of employees, turnover, sales or the natural logarithm of total assets (Dyreng, Hanlon, & Maydew, 2008). Additionally, it can be measured by the number of employees, total assets, sales or market capitalization (Uniamikogbo et al., 2018). Hoi-Wu and Zhang (2013) observed that large firms hold an edge over their smaller counterparts in tax-aggressive strategies due to their greater financial resources enabling such practices.

2.2.2. Firm Leverage

The amount of outside capital or debt obligations that a company has received to fund its operations is known as leverage. Anouar and Houria (2017) posited that leverage is used as operating or financing leverage. Operating leverage is concerned with using leverage on assets such that the company pays fixed costs referred to as depreciation. Financial leverage is used to fund the company such as when the company or business pays finance costs or interest on capital. The company uses two financing options: debt financing which is concerned with borrowing funds and equity financing which is concerned with the sale of shares of the company.

2.2.3. Firm Liquidity

Liquidity is the availability of cash or the ability to convert inventory to cash for the purpose of the business operation. It is used to determine the organization's ability to pay its debts on time. According to Hanlon and Heitzman (2010) corporate tax considerations can limit management's investment decisions as the uncertainty surrounding tax payments and deductions affects the computation of an investment's present value. Key deductibles such as interest expenses, tangible asset depreciations and intangible asset amortizations constitute significant portions of firms' expenses.

2.2.4. Firm Profitability

Profitability stems from a company's capacity to use its resources effectively to generate revenues that exceed its expenses. It stands as a critical element for every business entity since a profitable firm typically exhibits superior operational performance (Roberts, 2012). Uniamikogbo et al. (2018) stated that profitability is a major reason for investing and management ensures that all strategies are employed in achieving it. Profitability is referred to as good news for firms. Majed, Said, and Firas (2012) noted that profitability ratios are indicators of the success, efficiency and effectiveness of the company.

2.3. Theoretical Framework

The basis of this study is Watts and Zimmerman (1978) positive accounting theory. The theory explains that companies' management uses different accounting practices and techniques. This theory is anchored in this study because it explains how the management of corporate organizations tries to reduce costs including government taxes to achieve organizational goals.

2.4. Review of Empirical Studies

A study by Lanis et al. (2017) examined corporate tax avoidance and liquidity by employing 200 samples of listed Australian firms from 2006-2010. The statistical tool used was regression and the result indicated that liquidity has a significant positive relationship with tax avoidance. Similarly, Ribeiro (2015) investigated firms' characteristics and corporate governance's tax aggressiveness using an effective tax rate in Portugal. Generalized least squares (GLS) was used as the statistical method revealing that specific characteristics of companies notably impact effective tax rates (ETRs). Firm size and profitability exhibit a positive correlation with the effective tax rate whereas leverage, capital intensity and research and development expenses demonstrate a negative relationship with effective tax rates.

Ogbeide (2017) investigated the firm characteristics and tax aggressiveness of listed firms in Nigeria from 2012–2016. The statistical techniques employed encompassed pool, random and fixed effects least squares regression. The findings indicated that firm size had a notably positive impact on tax aggressiveness, external audit quality exhibited a significant positive correlation with tax aggressiveness and leverage demonstrated a significant negative relationship with tax aggressiveness. A study conducted by Pratama (2017) as cited in Rani, Susetyo, and Fuadah (2018) on company characteristics and corporate governance concerning companies' aggressive tax avoidance of 70 sampled Indonesian listed firms from 2011 to 2015. The statistical tool used was multiple linear regression and the results revealed that company characteristics such as age, profit and size have a significant effect on tax avoidance practices while corporate governance variables like audit firm, audit quality and size of the board of commissioners also have an effect on tax avoidance. Rani et al. (2018) examined the tax avoidance characteristics of 49 sampled manufacturing firms listed on the Indonesia Stock Exchange. Random effect panel regression analysis was employed to illustrate that profitability and size significantly influence tax avoidance showing a negative relationship whereas leverage demonstrated a significant effect and a positive relationship with tax avoidance. Uniamikogbo et al. (2018) investigated the firm attributes and tax aggressiveness of deposit money banks in Nigeria from 2013-2017. Descriptive statistics and regression were the statistical techniques such that leverage, liquidity and firm size showed significant influence on tax aggressiveness while profitability showed no significant effect on tax aggressiveness.

Ifurueze et al. (2018) examined corporate tax aggressiveness strategies on firm growth in Nigeria. It used pooled multiple regressions and found that leverage was not statistically significant for firm growth. Similarly, firm growth is statistically insignificant with an effective tax rate.

Ugbogbo et al. (2020) examined corporate determinants of aggressive tax avoidance of firms in Nigeria using a sample size of forty companies quoted on the Nigerian Stock Exchange from 2013–2017. The statistical tool employed was ordinary least square (OLS) multiple regression. The result showed that company size (F SIZE) has a positive relationship with corporate tax aggressiveness (CTA) while profitability (PROF) and leverage (LEV) were

statistically significant but indicated a negative relationship with tax avoidance. Bashir and Zachariah (2020) investigated the effect of ownership structure on the tax planning of quoted non-financial companies in Nigeria from 2008-2017. Descriptive statistics and multiple regressions served as the statistical methodologies. Findings indicated that managerial and institutional ownership do not exhibit a significant positive impact on tax planning while foreign ownership does not demonstrate a significant negative effect. Leverage had no noticeable detrimental impact on tax planning but profitability as measured by return on assets showed a strong beneficial influence.

Obelogu and Olatunde (2022) investigated the firms' characteristics and tax aggressiveness of 30 non-financial listed companies in Nigeria covering a time period of eight years starting from 2013 to 2020. The study employed descriptive statistics and multiple linear regression and the outcome showed that the operating cash flow ratio has a positive and significant effect on the cash effective tax rate while the debt-to-assets ratio and capital intensity exhibited a negative influence on tax aggressiveness. Firm size showed a positive relationship but had no significant influence on tax aggressiveness. In addition, Wijaya and Hasbiy (2020) examined the relationship between operating cash flows and tax avoidance using fifty-eight manufacturing industries in Indonesia for four years. The data obtained was analyzed using descriptive and regression methods. The study indicated that cash flows from operations influenced discretionary tax avoidance. Yahaya and Yusuf (2020) investigated company characteristics and aggressive tax avoidance in twenty sample Nigerian listed insurance companies from 2010 to 2018. The study employed a two-step generalized method of moments (GMM) panel model estimator. The analysis revealed that firm size and leverage exert a positive and significant influence on aggressive tax avoidance whereas firms' profitability and age displayed a significant impact with a negative relationship to tax aggressiveness.

3. METHODOLOGY

3.1. Design

It is a longitudinal study spanning a period of five years from 2015 to 2019 and concentrates on a total population of 87 non-financial firms listed on the Nigerian Exchange Group Public Limited Company (PLC). The sample size comprised 63 firms. The data were sourced from the financial statements and accounts of these companies and analyzed using descriptive and inferential statistics. The model specification is given below.

$$TAXAG = f(FSIZE, LEV, LIQ, PROF) \qquad (1)$$
$$TAXAG_{i,t} = \beta_0 + \beta_1 FSIZE_{it} + \beta_2 LEV_{it} + \beta_3 LIQ_{it} + \beta_4 PROF_{it} + e \quad (2)$$

Where

β_0 = Constant.

β_1 to β_5 = Coefficient of the explanatory variables.

TAXAG= The tax aggressiveness of a company "i" at a time "t".

e = Error terms.

Our apriori expectation is stated : $\beta_1 > 0, \beta_2 > 0, \beta_3 < 0$ and $\beta_4 > 0$.

Table 1. Operationalization of variables.

Variables	Notation and measurement	Sources	Apriori sign
TAXAG	Tax aggressiveness is measured by the effective tax rate (ETR) which is the ratio of the current tax expense to pre-tax income.	Chen et al. (2010)	
FSIZE	Firm size is measured as the natural logarithm of total assets.	Dyreng et al. (2008)	+
LEV	Leverage is measured as the total debt divided by the total assets of the firm.	Joulfain (2011)	+
LIQ	Current asset is divided by current liability.	Hassan and Farouk (2014)	-
PROF	The profitability of the company is measured by profit after tax divided by total assets.	Kabajeh, Al Nu'aimat, and Dahmash (2012)	+

167

Table 1 presents the measurement of dependent and independent variables and the various expectation signs for this study.

3.2. Method of Analysis

This study employs descriptive statistics, correlation matrix analysis and fixed and random effects panel least square regression for analysis. A Hausman test is conducted initially under a random effect model. If the Hausman test conducted under the random effect model indicates rejection, then the fixed effect model is accepted. The null hypothesis (H0) of the Hausman test supports the random effects model if the calculated probability value exceeds the critical probability value at a 5% significance level.

i)   Fixed Effect: The model for the fixed effects is stated as:

$$Y_{it} = X_{it}\beta + \alpha_i + u_{it} \ for \ t = 1,..,T \ a \ and \ I = 1,..,N$$

Where y_{it} is the dependent variable observed for individual i at time t, X_{it} *is the time-variant 1 x k regressor matrix, α_i* is the unobserved time-invariant individual effect and U_{it} *is the error term. Unlike X_{it}, α_i cannot* be observed by the econometrician.

ii)   Random Effect: The model for random effect is stated as:

$$Y_{ij} = \mu + U_i + W_{ij},$$

Where μ is the average test score for the entire population? In this model, U_i is a firm- specific random effect. It measures the difference between the average score at firm I and the average score over time and it is random because the sample has been randomly selected from a larger population. The term W_{ij} is individual-specific effect.

Table 2. Descriptive statistics.

Variables	ETR	FSIZE	LEV	LIQ	PROF
Mean	0.22	7.17	0.62	1.23	5326532.
Median	0.28	7.11	0.59	1.17	317969.0
Maximum	11.8	9.24	2.99	43.0	3.90E+08
Minimum	-25.2	3.67	0.02	-116.9	-1.79E+08
Std. dev.	1.57	0.87	0.31	5.29	28007294
Skewness	-8.05	-0.09	2.59	-18.2	6.94
Kurtosis	145.6	2.99	15.4	433.9	82.9
Jarque-Bera	501297.3	0.84	4387.925	4549628.0	160179.0
Probability	0.000000	0.655482	0.000000	0.000000	0.000000
Observations	584	584	584	584	584

Note: E indicates scientific notation" or "to power of".

4. INTERPRETATION OF RESULTS AND DISCUSSION OF FINDINGS

Table 2 highlights descriptive statistics. It is deduced that tax aggressiveness (TAXAG) which indicates maximum and minimum values of 11.8 (12%) and -25.2 units individually, with a mean of 0.22 (22%) and a standard deviation value of 1.57 units signifies that on average, most of the sampled non-financial companies for the period carried out tax aggressiveness since the mean value is lower than the government tax rate of 0.30 (30%). Firm size represented by the natural logarithm of total assets of the sampled companies ranged from a minimum value of 3.67 units (approximately N3.7 billion) to a maximum value of 9.2408 units (approximately N9.2 billion). The mean value was 7.17 units (approximately N7.2 billion) with a lower standard deviation of 0.87 units. This suggests that some of the sampled companies are relatively large in size on average. Leverage (LEV) ranged from a minimum of 0.02 to a maximum of 2.994 with a mean value of 0.62 units (approximately 62%) and a standard deviation of 0.3124 units. This indicates that a greater number of the sampled companies were financed with a significant debt burden on average. Liquidity (LIQ) had a mean value of 1.234 with a maximum of 42.971 and a minimum of -116.85. The high standard deviation of 5.29 units suggests that a greater proportion of the sampled companies were not sufficiently

liquid (given that the mean value was less than the rule of thumb ratio of 2:1) on average. Profitability (PAT) reported in thousands had a mean value of N532.6million ranging from a minimum of 3.90E (approximately N3.9) to a maximum of -1.79E+08 (approximately N179 million loss) with a low standard deviation of 2800 units. This implies that a greater proportion of the sampled companies generated profit after tax on average.

Table 3. Correlation matrix.

Variables	TAXAG	FSIZE	LEV	LIQ	PROF
TAXAG	1.000000				
F SIZE	-0.000618	1.000000			
LEV	-0.08	-0.04	1.000000		
LIQ	0.05	-0.01	-0.04	1.000000	
PROF	-0.03	0.32	-0.11	0.000609	1.000000

Table 3 indicated that firm characteristics (as measured by firm size, profitability, liquidity, leverage and auditor type) and tax aggressiveness had mixed correlation coefficients which were either positive or negative values as exhibited in Table 3 of the correlation matrix. When tax aggressiveness (TAXAG) is at a perfect value of 1.0000, it is positively correlated with liquidity (LIQ, r = -0.05 unit) while it demonstrated a negative connection with firm size (FSIZE, r = -0.0006 unit), leverage (LEV, r = -0.08 unit) and profitability (PAT, r = -0.02 unit). The highest value of the correlation coefficient is firm size (FIRM SIZE) at 0.36 units. The correlation coefficients are moderately small indication of the low effect of firm characteristics. Furthermore, according to Meyers, Gamst, and Guarino (2006) none of the correlation findings found are above 0.90 indicating that the low correlations are not due to a multi-collinearity issue in the regression variables.

Table 4. Panel least square regression dependent: Tax aggressiveness (TAXAG).

Variables	Panel least square (PLS) regression	
	Fixed effects	**Random effects**
	Coefficients T-statistic (PV)	Coefficients T-statistic (PV)
Constant	-6.18 -4.72 (0.000)***	-5.24 -3.62 (0.000)***
FSIZE	0.76 3.54 (0.000)***	0.04 3.41 (0.000)***
LEV	-0.57 -3.25 (0.000) ***	-0.44 -3.01 (0.000) ***
LIQ	0.01 1.37 (0.48)	0.01 1.41 (0.42)
PROF	1.982E-08 2.54 (0.03)**	2.011E-08 2.23 (0.04)**
R-square	0.69	0.67
Adjusted Ṙ-square	0.67	0.6435
Standard error of regression	1.74	1.84
F-statistic probability value (PV)	17.1 (0.000)***	19.2 (0.000)***
Durbin-Watson	1.83	1.79
Hausman test (HT) Probability value (PV)		2.74 (0.63)

Note: E indicates scientific notation" or "to power of" Symbols of **and *** mean 5% and 1% level of significance respectively.

Table 4 highlights the results of the fixed effect model and the random effect model panel least square regression as interpreted below:

169

Fixed Effect Model: The fixed effect coefficient of determination (R-square) (R²) at 0.6857 with tax aggressiveness (TAXAG) indicates that approximately 69% of the changes in the dependent variable (tax aggressiveness) are explained by the firm attributes including firm size (FSIZE), profitability (PAT), liquidity (LIQ) and leverage (LEV) while the remaining 31% of the variations are unaccounted for and captured by the error term. After correcting for degree of freedom, the adjusted coefficient of determination (adjusted R-square) (Ř²) for tax aggressiveness is 0.67 units indicating that the independent variables of firm attributes account for approximately 67% of the variations in the dependent variable (tax aggressiveness). The F-statistic computed at 17.1 with a probability value of 0.000 when evaluated against the minimal standard error of regression (1.74) indicates that the overall result is statistically significant suggesting the existence of a linear relationship between firm attributes and tax aggressiveness. Furthermore, the Durbin-Watson value of 1.83 implies no serial correlation in the results. Additionally, firm size, leverage and profitability demonstrate statistical significance at the 1% and 5% significance levels while liquidity is still appropriate for making policy decisions despite the fact that it is statistically insignificant.

Random Effect Model: The coefficient of determination R-square (R2) value of 0.6694 with tax aggressiveness (TAXAG) indicates that over 67% of the variations in tax aggressiveness are accounted for by the firm attributes. Furthermore, the adjusted coefficient of determination Ř2 value of 0.64 with tax aggressiveness (TAXAG) suggests that over 64% of the changes in tax aggressiveness are explained by the explanatory variables of firm attributes with the remaining 36% captured by the error term after adjusting the degree of freedom. The F-statistic of 19.2 associated with a probability value of 0.000 (1%) compared with the minimum standard error of regression of 1.84 indicates a significant linear association between the dependent and explanatory variables. Additionally, the Durbin-Watson value of approximately 1.79 suggests the absence of an autocorrelation problem in the results.

4.1. Discussion of Findings

Firstly, in Table 4 (random effect column), firm size indicates positive coefficient values of 0.04 with tax aggressiveness indicating that a unit increase in firm size may lead to a 4% increase in tax aggressiveness implying that a unit increase in firm size could lead to an increase in tax aggressiveness. This result aligns with our prior expectation which posited that a unit increase in firm size could potentially increase tax aggressiveness. However, the tested hypothesis indicates that firm size is statistically significant suggesting that it does exert a significant influence and is positively related to tax aggressiveness among non-financial quoted companies in Nigeria. Consequently, firm size emerges as a critical factor in promoting tax aggressiveness as it necessarily enhances and motivates tax aggressiveness by firm management on behalf of shareholders or other stakeholders. This finding is consistent with previous studies by Pratama (2017); Ugbogbo et al. (2020) and Ribeiro (2015) which all reveal a positive relationship between firm size and tax aggressiveness. On the other hand, Inua (2018) finds that firm size has no significant influence and is negatively related to tax aggressiveness. However, this conclusion contradicts the findings of Rani et al. (2018) who demonstrate that firm size has a significant negative relationship with tax aggressiveness.

Secondly, in Table 4 (random effect column), leverage (LEV) exhibits a negative coefficient value of -0.4383 with tax aggressiveness suggesting that a unit increase in leverage could lead to an approximately 44% decrease in tax aggressiveness. The result is in tandem with some extant studies. For instance, Ribeiro (2015) argued for a negative relationship between leverage and tax aggressiveness while Ogbeide (2017) showed that leverage significantly exerts a negative relationship with tax aggressiveness. In contrast, Inua (2018) revealed a negative and significant relationship between firm leverage and tax aggressiveness. Nevertheless, Bashir and Zachariah (2020) found that leverage has no significant negative effect on tax aggressiveness. This finding contradicts our prior expectations. Leverage emerges as statistically significant indicating a notable influence but a negative association with tax aggressiveness. This result is supported by Rani et al. (2018) who found a significant positive effect of leverage on tax aggressiveness. Additionally, Anouar and Houria (2017) indicated that highly indebted firms are prone to

exploiting debt capital characteristics to engage in tax aggressiveness. Similarly, Akanksha, Jayant, and Costanza (2016) demonstrated that leverage may prompt managers to avoid paying more taxes while Huang, Ying, and Shen (2018) identified a positive link between high leverage and tax aggressiveness.

Thirdly, in Table 4 (random effect column), liquidity (LIQ) exhibits a positive coefficient value of 0.01418 with tax aggressiveness indicating that a unit increase in liquidity could lead to a tax aggressiveness increase of over 1%. However, liquidity is statistically insignificant suggesting it has an inconsequential influence and a positive association with tax aggressiveness. This implies that firms with higher liquidity levels tend to engage in tax aggressiveness in Nigeria. This result is consistent with the existing finding of Lanis et al. (2017) who identified a positive relationship between liquidity and tax aggressiveness. However, Uniamikogbo et al. (2018) indicated a significant impact on tax aggressiveness suggesting potential differences in the observed relationships across studies.

Finally, in Table 4 (random effect column), profitability (PROF) displays a positive coefficient value of 2.011 with tax aggressiveness suggesting that a unit increase in profitability could result in a 201% decrease in tax aggressiveness. Profitability emerges as statistically significant indicating a substantial influence and a positive association with tax aggressiveness among quoted non-financial companies in Nigeria. This implies that profitability strongly influences tax aggressiveness. This finding is consistent with existing studies. Ribeiro (2015) demonstrated a positive association between profitability and tax aggressiveness suggesting that larger and more profitable firms tend to engage in tax aggressiveness. Similarly, Pratama (2017) argued that profitability significantly impacts tax aggressiveness practices negatively. Additionally, Rani et al. (2018) indicated that profitability has a significant negative effect on tax aggressiveness further supporting the observed relationship.

5. CONCLUSION

The thrust of this study is on firm characteristics and tax aggressiveness among non-financial companies. Extant studies showed divergent results from a review of related literature. The study's analysis and interpretation of the data have demonstrated that firm characteristics such as size, profitability and leverage have a significant impact on tax aggressiveness among Nigeria's non-financial listed companies. These findings may have a positive or negative relationship with tax aggressiveness. Consequently, firm size, leverage and profitability are important variables that can either positively or negatively enhance tax aggressiveness. Furthermore, liquidity has no significant influence but demonstrates a positive relationship implying that it is a weak enhancing factor of tax aggressiveness. The results show that corporate characteristics influence tax aggressiveness in Nigerian non-financial firms.

This study recommends the following:

(1) Firm size especially from the perspective of assets should be properly managed by the management of organizations. Management should always ensure that the assets of the organization are charged accordingly for tax purposes, especially those expenses occasioned by the firm's assets. Furthermore, as turnover is another way of measuring firm size, management should ensure that value-added tax (VAT) is paid to the government accordingly.

(2) Organizational management should prioritize profitability over other factors avoiding cost manipulation or tax loopholes as methods to achieve or determine profitability. Management should report the correct profit before tax and should pay the correct tax to the government.

(3) The management of companies should ensure that issues of the liquidity position of the organization are not taken for granted. Management should always monitor their liquidity by way of measuring actual against the standard or rule of thumb of a ratio of 2 to 1. Both the current assets and liabilities of the organization are well managed and should not be inflated by activities of tax aggressiveness undertaken by the management of firms.

(4) The leverage or use of debt as a double edges sword that can either kill or survive the firm should be carefully managed. Management of companies should ensure that debt incurred for financing their business is not the yardstick for engaging in activities of tax aggressiveness during the preparation of accounting reports.

Thus, the policy implications are that **it** will be of immense benefit to companies to ensure that their tax strategies align with ethical and legal standards and that they maintain transparency in their financial reporting. It will assist government tax authorities at both the federal and state levels in terms of assessing companies for tax purposes.

REFERENCES

Akande, L. (2005). *The scandal of a nation*. Retrieved from http://www.utexas.edu/conferences/africa/ads/1349.htm1

Akanksha, J., Jayant, R. K., & Costanza, M. (2016). Debt, bankruptcy risk, and corporate tax aggressiveness. *This Version: December 24, 2016.*

Anouar, D., & Houria, Z. (2017). The determinants of tax avoidance within corporate groups: Evidence from Moroccan groups. *International Journal of Economics, Finance and Management Sciences, 5*(1), 57-65. https://doi.org/10.11648/j.ijefm.20170501.15

Barford, V., & Holt, G. (2013). *Google, Amazon, Starbucks: The rise of 'tax shaming. BBC News Magazine, 21.* Retrieved from http://www.bbc.com/news/magazine-20560359

Bashir, T., & Zachariah, P. (2020). Ownership structure and tax planning of listed firms: Evidence from Nigeria. *Journal of Accounting and Taxation, 12*(3), 99-107.

Boussaidi, A., & Hamed, M. S. (2015). The impact of governance mechanisms on tax aggressiveness: Empirical evidence from Tunisian context. *Journal of Asian Business Strategy, 5*(1), 1-12.

Chen, S., Chen, X., Cheng, Q., & Shevlin, T. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics, 95*(1), 41-61. https://doi.org/10.1016/j.jfineco.2009.02.003

Dewi, K. K. S., & Yasa, G. W. (2020). The effects of executive and company characteristics on tax aggressiveness. *Jurnal Ilmiah Akuntansi dan Bisnis, 15*(2), 280-292.

Dyreng, S. D., Hanlon, M., & Maydew, E. L. (2008). Long-run corporate tax avoidance. *The Accounting Review, 83*(1), 61–82. https://doi.org/https://doi.org/10.2308/accr.2008.83.1.61

Guimarães, G. O. M., da Silva Macedo, M. Á., & Da Cruz, C. F. (2016). Analysis of the effective tax rate on profit in Brazil: A study focusing on ETRt and ETRc. *Enfoque: Reflexão Contábil, 35*(1), 1-16. https://doi.org/10.4025/enfoque.v35i1.30570

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics, 50*(2-3), 127-178. https://doi.org/10.1016/j.jacceco.2010.09.002

Hassan, S. U., & Farouk, M. A. (2014). Firm attributes and earnings quality of listed oil and gas companies in Nigeria. *Review of Contemporary Business Research, 3*(1), 99-114.

Hoi-Wu, C. K., & Zhang, H. (2013). Is corporate social responsibility (CSR) associated with tax avoidance? Evidence from irresponsible CSR activities. *The Accounting Review, 88*(6), 2025-2059. https://doi.org/10.2308/50544

Huang, W., Ying, T., & Shen, Y. (2018). Executive cash compensation and tax aggressiveness of Chinese firms. *Review of Quantitative Finance and Accounting, 51*(4), 1151-1180.

Ifurueze, M. S., John-Akamelu, R. C., & Iyidiobi, F. C. (2018). Effect of corporate tax aggressiveness on firm growth in Nigeria: An empirical analysis. *International Journal of Trend in Scientific Research and Development, 2*(6), 1628-1639.

Igbikiowubo, H. (2005). *Chevron in $10.8 billion tax evasion mess(online). Vanguard. Monday, July 25, 2005. Lagos.* Retrieved from http://www.vanguardngr.com/articles/2002/headline/f125072005.htm1

Inua, O. (2018). Determinants of corporate effective tax rate: Empirical evidence from listed manufacturing companies in Nigeria. *Accounting and Taxation Review, 2*(3), 48-61.

Joulfain, D. (2011). *Corporate debt policy and tax evasion. Working Paper.* Retrieved from http://dx.doi.org/10:2139/ssrn.1342712

Kabajeh, M. A. M., Al Nu'aimat, S. M. A., & Dahmash, F. N. (2012). The relationship between the ROA, ROE and ROI ratios with Jordanian insurance public companies market share prices. *International Journal of Humanities and Social Science, 2*(11), 115-120.

Khurana, I. K., & Moser, W. J. (2013). Institutional shareholders' investment horizons and tax avoidance. *The Journal of the American Taxation Association, 35*(1), 111-134. https://doi.org/10.2308/atax-50315

Lanis, R., Richardson, G., & Taylor, G. (2017). Board of director gender and corporate tax aggressiveness: An empirical analysis. *Journal of Business Ethics, 144*, 577-596.

Majed, A. M. K., Said, M. A. A., & Firas, N. D. (2012). The relationship between the ROA, ROE and ROI ratios with Jordanian insurance public companies market share prices. *International Journal of Humanities and Social Sciences, 2*(11), 115-116.

Meyers, L. S., Gamst, G., & Guarino, A. J. (2006). *Applied multivariate research: Design and interpretation.* London: Sage.

Obelogu, M. I., & Olatunde, J. O. (2022). *Firms' characteristics and tax aggressiveness of listed companies in Nigeria.* Paper presented at the ICAN Proceedings of the 7th Annual International Academic Conference on Accounting and Finance Disruptive Technology: Accounting Practices, Financial and Sustainability Reporting Rivers State University of Science and Technology University of Port Harcourt.

Ogbeide, S. O. (2017). Firm characteristics and tax aggressiveness of listed firms in Nigeria: Empirical evidence. *International Journal of Academic Research in Public Policy and Governance, 4*(1), 556-569.

Okwe, M. (2019). Nigeria loses $15 billion annually to tax evasion, says FIRS. The Guardian Business News, 24 October 2019 | 4:10 am.

Omoigui, I. (2006). Policy and thrust of tax reform bills. Business Day Law Review. 10-12.

Onyali, C. I., & Okafor, T. G. (2018). Effect of corporate governance mechanisms on tax aggressiveness of quoted manufacturing firms on the Nigerian stock exchange. *Asian Journal of Economics, Business and Accounting, 8*(1), 1-20.

Pratama, A. (2017). Company characteristics, corporate governance and aggressive tax avoidance practice: A study of Indonesian companies. *Review of Integrative Business and Economics Research, 6*(4), 70-81.

Rani, S., Susetyo, D., & Fuadah, L. L. (2018). The effects of the corporate's characteristics on tax avoidance moderated by earnings management Indonesian evidence. *Journal of Accounting, Finance and Auditing Studies, 4*(3), 149-169.

Ribeiro, A. I. M. (2015). *The determinants of effective tax rates: Firms characteristics and corporate governance.* Master's Thesis in Finance and Taxation, Faculdade De Econoia, Universidado Do Porto.

Roberts, T. (2012). Determinants of corporate social responsibility disclosure an application of stakeholder theory. *Accounting Organisation and Society, 17*(3), 595-612.

Sterling, T., & Bergin, T. (2016). *Google accounts show 11 billion euros moved via low tax 'Dutch sandwich' in 2014 reuters.* Retrieved from http://www.reuters.com/article/us-google-tax-idUSKCN0VS1GP

Taylor, H. (2016). *How apple managed to pay such a low tax rate in Ireland CNBC.* Retrieved from http://www.cnbc.com/2016/08/30/how-apples-irish-subsidiaries-paid-a0005-percent-tax-rate-in-2014.h

Ugbogbo, S. N., Omoregie, N. A. E., & Eguavoen, I. (2020). Corporate determinants of aggressive tax avoidance: Evidence from Nigeria. *International Journal of Auditing and Taxation, 3*(1), 1-13.

Uniamikogbo, E., Atu, O. G., & Atu, O. O. K. (2018). Effect of firm attributes on tax aggressiveness in Nigeria. *International Journal of Auditing and Taxation, 2*(1), 1-22.

Watts, R. L., & Zimmerman, J. L. (1978). Towards a positive theory of the determination of accounting standards. *Accounting Review, 53*, 112-134.

Wijaya, S., & Hasbiy, M. (2020). Relation between financial indicator and corporate governance to tax avoidance in Indonesia. *Opcion Revista De Ciencias Humanas y Sociales, 90*(91), 1556-1574.

Yahaya, K. A., & Yusuf, K. (2020). Impact of company characteristics on aggressive tax avoidance in Nigerian listed insurance companies. *Jurnal Administrasi Bisnis, 9*(2), 101-111.