



Tax Strategic Behaviour and Financial Performance of Quoted Agro-Allied Firms in Nigeria

By

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Abstract:

Although there is a large literature on the relationship between tax strategic behavior and financial performance, there is no consensus about the nature of this relationship. The aim of this research is to analyse the relationship between tax strategic behavior and financial performance of listed agro-allied firms in Nigeria. secondary data on different types of tax strategic behavior and profit after tax from 2013-2023 were collected from central bank of Nigeria statistical bulletin, National Bureau of statistics and Federal Inland revenue Service. Descriptive statistics, ordinary least square regression analysis, augmented Dickey Fuller, Johansen Cointegration and error correction model were used in analyzing the data. The result indicate that tax strategic behaviour significantly relate to financial performance; explain about 82.4% of financial performance, research & development significantly relate to profit after tax. Thin capitalization and capital intensity were each found to not significantly relate to profit after tax. The study conclude that the exist a strong negative and significant relationship between tax strategic behavior and financial performance and recommends that amongst others that companies should put in place appropriate tax strategic behavior that will decrease their tax liabilities and therefore improve their overall corporate financial performance.

Keywords:

Thin Capitalization, Capital Intensity, profit After tax, Tax Strategic Behaviour and Financial Performance.



Introduction

Long but large, agro-allied companies are companies which depend on agriculture for their raw materials so as to operate successfully in the production of finished goods that are useful to animals and humans. Agro-allied industry is an integral part of the economic growth of any country. Various cash crops that are produced in different countries could be major source of economic growth. Agro-allied industry plays a fundamental role in the production of income and employment opportunities in developing countries. The Agro-processing sector is by far the most significant component in the agro-allied food industry and covers a broad area of the post-harvest activities, packaged agricultural raw materials, industrial and technology intensive processing of intermediate goods and from the fabrication of the final product derived from agriculture. According to NgCareers (2009), agro-allied company is very important because it helps in raising political, economic status in Nigeria among the committee of nations since the level of industrialization and their production capacity determines the status of a country which consequently impact positively on the economy of the country and raising the standard of living. Thus, like any other industry Agro-allied companies are expected to continue improving their performance so as to sustain their role in the society.

Agro-allied companies are established companies with activity in the business of large-scale farming and livestock production. They also acquire relevant equipment for processing, packaging and storing food and beverages to generate revenue and improve per capital food intake(NgCareers,2009). Similarly they are involved in agricultural consulting, fertilizer manufacture and sales, fish import and export, livestock feeds and feed millers, ocean trawling, scrimping and fishing poultry farms, hatcheries and veterinary clinics (The NigeriaBiz.com 2009). FAO (1975) posits that agro-allied companies are important in stimulating agricultural developing countries, of which Nigeria is one and accelerating their economic growth and sustained progress towards elimination of disparities. The financial performance of agro-business in Nigeria has been the focus of much discussion, debate, and analysis in recent years. The rate by which objective of the firm and in this case financial objectives will be met or have been met is referred to as financial performance(Omesia&Appah, 2021). Financial performance analysis is the process of determining the operating and financial characteristics of a firm from accounting and financial statements. It deals with items such as dividend growth, sales turnover, capital employed, asset base among others about the firm (Dharmarathn, 2013). The financial performance is a crucial indicator or measure of some economic units, success for example achievement of set goals and objectives (Xu&Wanrapee, 2014). The goal of such analysis is to determine the efficiency and performance of firm's management, as reflected in the financial records and reports. The analyst attempts to measure the firm's liquidity, profitability and other indicators that the business is conducted in a rational and normal way; ensuring enough returns to the shareholder to maintain at least it's market value.

The financial stress and failure rate in agro-allied industry in Nigeria is so high and this calls for concern. In attempting to improve the financial conditions of agro-allied companies in Nigeria, researchers, scholars, policy makers and other stakeholders have demonstrated that the industry should be strategic in its tax behavior. Knesl (2018) defines taxation as a compulsory contribution to support government levied on persons, property, income, commodity and transaction mostly proportional to the amount on which contribution is levied. Nurdayadi (2019) defines taxation as compulsory payment made by individuals and companies to the government coffer as a percentage of their annual income primarily with the aim of raising revenue and secondly with the aim of directing

the factors of production towards government objective for that period. One of the major functions of government especially developing countries such as Nigeria is the provision of infrastructural services such as electricity, schools, hospitals, pipe-borne water, good roads and as well as ensure a rise in per capita income, poverty alleviation to mention a few, for these services to be adequately provided, government should have enough revenue to finance them, based on the limited resources of government, there is need to carry the citizens(governed) along hence the imposition of tax on all taxable individuals and companies/organizations to augment government financial position is essential.

According to Herwati and Kumala(2020), tax is a major player in every society of the world. The tax system is an opportunity for government to collect additional revenue needed in discharging its obligations. While tax is revenue to the government, it is a cost to businesses, hence businesses engage in any form of activities to avoid the payment of tax in order to improve their financial performance. Herwati and Kumala (2020), further posits that any form of legally accepted tax behaviour exhibited by a business to minimize its tax liability is known as strategic tax behavior. An attempt to investigate the extent to which strategic tax behavior of agro-allied companies influence their financial performance, is the reason for this study. This of course is the crux of the matter.

Strikingly, previous empirical studies conducted both in Nigeria and outside Nigeria on tax strategic behavior and financial performance revealed mixed and inconclusive results. While some studies (see Abdul-Wahad & Holland, 2012; Abdul-Wahab, 2016; Adegbe, Akintoye & Isiaka, 2019; Adeghoyegum, et al, 2020; Akintoye, Adegibie & Onyeka-Iheme (2020); Nwaiwu & Benvolio, 2023; Chukwudi, Okonkwo & Asika, 2024) showed a positive relationship between tax strategic behavior and financial performance and other researchers (e.g – Ftouhi, Aged & Zemen, 2014; Izevbekhi & Odio, 2018; Oeta, Kiai & Muchiri, 2019; Chukwudi, Okonkwo & Asika, 2020; Nafti, Kateb & Masghouni, 2020) revealed a negative relationship between tax strategic behavior and firm value. However, the inconclusive nature of prior studies largely because of changes in the sample size, independent variable inclusion deficiency, using one or two tax planning variables in some studies, and location. This weakness makes significant gap in prior studies. Therefore, following the aforementioned gap created by the prior studies in terms of findings and conclusion reached by previous studies, this study aim at filling the gap that exist between tax strategic behaviour and financial performance of listed agro-allied firms in Nigeria.

This paper is divided into five main sections including this introduction as section one. Section two presents the theoretical framework, reviews the theoretical and empirical literature on tax strategic behaviour and financial performance; it also states the hypotheses tested. Section three presents the methodology, while section four reports the empirical results. Section five concludes the paper and makes recommendation.

Review of Related Literature and Hypotheses Development Context

The debate on the effect of tax strategic behavior on performance. Variables such as profit after tax, net profit margin and return on equity has generated considerable interest as well as controversy in the theoretical and empirical literature (Zariyima & Cletus, 2014; Belz, Hagarn & Steffeus, 2019). For empirical exploration of the relationship in the case of Nigeria, the present study takes into account various schools of thought.

Theoretical Paradigm

Agency theory was fathered by Jensen and Meckling (1976) they hypothesized that an agency relationship ensues where individual(s), the principal, enters into a contract with another individual(s), the agent, to effectuate assignments such as decision making. Managers serve as representatives of shareholders who delegate obligation to a 3rd person in a corporate structure. According to this theory, the separation of proprietorship from management causes divergence of interest betwixt the shareholders and the management. Managers are generally pre-occupied with realizing their own interests and targets which are usually different from the overall objective of increasing firm value.

Agency theory guided this study by helping to understand the agency framework in corporate tax planning and proposing ways in order to reduce problems arising from such framework. Tax minimization decisions are made by managers who act on behalf of the shareholders; conflicts between shareholders' and management might occur because the executives responsible for tax effective decisions are more likely to opportunistic and redirect benefits realized from tax optimization for their benefit (Putri et al., 2017). Moreover, tax minimization is rather a risky activity which if not properly implemented could lead to additional costs borne by the firm, including, the risk of being audited, tax fines, and loss of corporation reputation. This implies that management cannot be relied upon, thereby demanding for the application of corporate governance mechanisms such as strict monitoring and advisory.

According to agency theory, the board of directors performs a critical function in reducing managerial opportunism consequently contributing to shareholders' wealth maximization. The board of directors, which is mandated to assign and ensure efficient use of necessary resources, enhance productivity, and ameliorate shareholder wealth, plays a key function in determining tax optimization strategies of a firm. Moreover, in most corporate organizations, tax ideologies and practices are executed and supervised by the board of directors as part of their fiduciary responsibility. Similarly, when corporate entities fail or suffer reputational loss, boards are held accountable because they are directly answerable to the stakeholders. The efficacy of the board to adequately oversee the executives is influenced by its size (Jensen, 1993). The numbers of board members affect a firm's administration guidelines. Smaller boards are considered effective for strengthening tax reduction practices, while large board memberships have demonstrated inefficiencies.

Echelons Theory

Upper Echelons Theory was put forward by Hambrick and Mason (1984), it asserts that organizational outcomes, with regards to strategies and effectiveness, is a replica of the values and cognition of top management team (TMT) in a firm. Successful execution of strategic issues and strategic leadership comprise both leadership and management functions (Hitt et al., 2002). Strategic decision making requires collaborative relationships of individuals to increase the exchange of information and risk taking at a cognitive level while promoting good corporate governance in companies in which they manage.

The theory proposes that strategic leaders are indispensable assets to a firm and are committed to strategic actions in the firm (Mubarak & Yusoff, 2019). The presence of institutional proprietors provides outside governance in the management of the affairs of the firm as per prescribed rules. Institutional owners bring along, know-how, skills and resources to influence the performance of the companies (Cornett et.al, 2005). Tax planning is one of the strategic mechanisms implemented so as

to increase firm value, however, it is equally a politically perfervid subject and likely to draw not so good observation from many stakeholders including the press, government, and consumer in what is described as “tax-shaming” (Barford and Holt 2013). The institutional owners are presumed to reflect on the benefits vis a viz costs of possible audit, punishment, and reputation loss if the strategy is unlawful (Hanlon and Heitzman 2010)

Conceptual Framework

The conceptual framework for the study (tax strategic behavior and financial performance). The independent variable (tax strategic behavior) are made up of thin capitalization, capital intensity, research & development. The dependent variable (financial performance) is profit after tax, shown in figure1.

Financial Performance

Financial performance is the analysis of a firm polices and operational activities in monetary terms. Financial performance measures are given in monetary terms in terms of revenue or profit (Chen, Check & Raziah; 2016; Chen, Chen, Cheng & Shevlin, 2016)). Mostly financial performance variables can be found in the annual financial statements of an organization (Chytis, 2019; Fagbemi, etal, 2019). The income statement and the balance sheet are germane in estimating the financial performance of a company because the income statement presents information on operating performance while balance sheet reveals the net worth of the organization.

One of the major ways for measuring financial performance of an organization is the usage of profitability financial ratios. Profitability measures the capacity of a firm to generate revenue or income on investment or through the utilization of production resources. Thus, profitability ratios evaluate the expanding capacity of a firm to increase profit, generate more revenue or earn higher income. Desai and Dharampala,(2019) asserted that, the survival and stability of a company rely on the ability of the economy to generate higher revenue or profit over a long period of time. Profitability ratios are of important to potential investors, shareholders, creditors, government and other stakeholders. Profitability creates cash flows through which organizations pay dividends, interest on debts, salaries and even taxation. Profitability ratios are also termed activities ratios for the reason that they signify the capacity of company to make profits from sales, assets used or capital employed (Ftouhi, Ayed&Zemzem, 2014). However, in this study return on equity (ROE) will be adopted as the financial performance indices. ROE is chosen as the study focuses on shareholder wealth maximization. Return on equity measures the part of revenue or profit that is accrued to shareholders.(Hidayatetal, 2019; Kirkpatrick & Radicie, 2020).

Profit After Tax

Profit after-tax is the earnings of a business after all income taxes have been deducted. This amount is the final, residual amount of profit generated by an organization. It calculates the theoretical amount of cash that a company could distribute to its shareholders if it had no debt. In other words, this is the amount of profits that a company makes from its operations after taxes without regard to interest payments. If the company had no obligations on the books, it would be able to distribute this entire amount of money to its shareholders at the end of the year. The profit after-tax figure is considered the best measure of the ability of an entity to generate a return, since it incorporates both operating income and income from other sources, such as interest income. The profit after-tax margin is closely watched by investors to see if the income-generating ability of a firm is changing over time. If so, this

could be considered a valuation indicator that may result in a change in the stock price (Hoffman, 1961; Ilaboyaetal, 2016)).

Strategic Tax Behaviour

The introduction of taxation is a good omen for the human society that is, the importance of taxation cannot be overemphasized. Income tax is one of major sources of revenue for the government, and it must be reckoned with in all the government's budget. It raises revenue to meet government expenditure. The government expenditure which requires to be met, it includes provision of services which the free market cannot provide such as defense, law and order and parks as well as provision of services which the state feels are better provided by itself such as health services and education, often referred to as public goods. Thus the taxes are collected, come back to the tax payers in the form of social amenities (Izevbeklai&Odior, 2018; Kirkpatrick &Radicia, 2020; Muniok&Noga, 2010).

Income tax has been used to encourage and discourage some activities in the private sector, though this depends on whether the policy of the government towards encouraging or discouraging such activities. The tax system may thus used for discouraging immoral activities such as alcohol or purchase cigarettes. Taxation is especially important to businessmen, who enjoy the benefits of water supply. Electricity and land allocation. It also reduces the net return on investment and decreases the balance for private savings. Taxation also has social effects as it affects the lives of nearly everybody, personal reliefs (aids and assistance), reliefs in respect of children and tuition(scholarship and grants), reliefs on insurance policy premiums, and dependent relatives relief(e.g gratuities of a dead civil servant) affect the social structure of the whole country. It further assists in the redistribution of wealth in the society. Taxes paid are used to bridge the gap between the rich and the poor. Income tax also has some effect on population movements and the extent of business carried on a state with a low income tax rate will find that more people are moving into that state, while traders will leave states with high income tax rates are engaged in various schemes of tax avoidance and tax evasions (Lestari &Wardhani, 2015; Ling &Abduhab, 2018).Strategic tax behavior refers to all those actions designed solely to minimize corporate tax obligations, without violating the tax laws. It includes thin capitalization, research and development, and capital intensity. (Lisowsky, etal 2013; Mais & Patminigih, 2017; Moppadang, 2019).

Thin Capitalization

The attraction of thin capitalization(commonly referred to as leverage) as a tax planning strategy lies in the tax shield, it provides as all interest elements of the debts may be tax deductible, depending on thin capitalization rules of the country of residence of the company. By extension, it also saves a business from additional cost of financing as the tax savings can be ploughed back into the business. According to Mumick and Nega (2010), Nnamani & Onyekwelu (2017), thin capitalization refers to the financial structure of the business in terms of the ratio of debts to the total capital of the business. Thinly capitalized companies have a relatively high level of debt compared to equity. In this study, thin capitalization is taken to mean the ratio of the total debts (long term debts plus current debts) of the company to the total assets they helped in financing. This definition of thin capitalization (Leverage) has been adopted by Nwanji and Howell (2007); Nwaobia, Kwarbai and Ogundejo (2016); Nwobia, Kwarbai and Ayodezi(2015); Oeta, Kiai and Muchcri(2019), in tax planning.

Thin Capitalization refers to a situation whereby an enterprise employs more debt and equity to finance its business activity (highly geared). The effect of thin capitalization on taxation is that enterprises with high debts funding would enjoy tax reliefs on interest charges unlike dividend. This is because interest is tax deductible and paid before the profit of the borrowing company is determined. This makes debt financing more attractive to associated companies with the intention of shifting profits from one country or center to another for the purpose of tax avoidance (Ogundajo&Onakoya, 2016; Omesia&Appah, 2010; Timothy, Izilin&Ndieferoke, 2016).

Thin capitalization refers to a condition where a company is financed through an extensive level of debt relative to equity. OECD (2012) defines thin capitalization as the strategy of a company to structure their financing with relatively high level of debt instead of equity, which sometimes referred to a 'highly leveraged'. High level of debt caused the company to pay a high amount of interest expenses. Since the tax regulation typically allows interest expenses to be tax deductible, the income of the company that is subject to taxation can be lowered. As consequence, by using this strategy company's tax burden will also be reduced. Before jumping further to explore thin capitalization strategy. (Soufiene, et al, 2016; Salow and Adedeje, 2017; Razali, 2018; Timothy, Izilin&Ndieferoke, 2010).

Capital Intensity

According to Borigham andGapenski (1996), capital intensity is defined as the ratio of non-current assets (fixed assets) to total assets. This ratio defines the level of a company's investment in fixed assets and by implication the level of capital assets related incentives a company can enjoy. Allowances and incentives based on capital intensity include Capital allowance (initial and annual), Investment Tax Credit (ITC), and Re-investment Allowance (RIA). Capital intensity is the cash invested in property, plants and equipment of a business entity. The more the firm is said to be capital intense, and this will affect the firm's value positively. According to Uchendu, et al (2016), Umobong and Agburuga (2018), capital intensity is the amount of investment made y business on their fixed assets, and it is measured by dividing non- current assets by total assets. A positive relationship exists between capital intensity and firm value (Zhang, Cheonge and Rajah (2016). The reason being that, as the capital intensity of firm increases, it will increase its quality of production and on time production and hence the value of the enterprise will increase.

Zhu, Mbroh, Monney&Bousu, 2019) argue that an optimal capital structure can be attained if there exist a tax sheltering benefits provided an increase in debt level is equal to the bankruptcy costs. They suggest that managers of a firm should be able to identify when the optimal capital structure is attained and try to maintain it at that level. This is the point at which the financing costs and cost of capital are minimized, thereby increasing firm value and performance. Capital intensity is generally synonymous with the concept of operating leverage. Thus increased capital implies future earnings variation. Therefore, top management's desire to retain control of the firm, and the concern of creditors to limit risk of default, should result in lower debt levels for firms choosing automation over labor as the primary factor of production, ceteris paribus (Barton & Gordon, 1988).

Desai and Dharmapala (2006) opined that, strategic tax behavior can lead to a reduction in firm value when managers have both the opportunity to undervalue reported accounting profit and the incentive to reduce company income tax liability by understating taxable income. Also, it will be valued negatively by shareholders in a situation where corporate governance is weak. This encourages

undervaluation of accounting profit. When corporate governance provision is strong, it is not possible to undervalue accounting profit, so this will have no effect on tax planning. Potential costs can exist such that tax planning can be challenged by a tax administration which can also affect reputational costs (Abdul-Wahab, 2010). Tax planning is initially believed to increase after tax earnings and therefore to be in the interest of shareholders.

Dessai and Dharmapala (2006) argued that managers may tend to satisfy their cardinal interest when there is an information asymmetry between managers and shareholders with respect to tax planning. This may result in a negative association between tax planning and firm value. Corporate governance is one of the measures that can moderate the potential implications of a tax related shareholder-manager information asymmetry. Strategic tax behaviour is perceived by Akintoye, et al (2020) as being important in the sense that, it arrogates more income to the relevant tax authorities and leads to tax savings for the organization. It often involves huge cost, which is the concept of under-sheltering puzzle as explained by (Herwati & Kumala, 2020). Clausing, (2003) is of the opinion that the business entity concept to some extent can create the problem of double taxation, whereby tax is payable on the dividend in the hand of the shareholders which is paid from after tax earnings. The planning strategy to be employed by various organizations according to Knesl (2010), depends on the size, ability and the nature of the companies. Effective tax planning minimizes the tax payment and consequently increases the after tax rate of return (Nurdayadi, 2019).

Strategic tax behavior has a positive influence on the flow of cash and financial performance of an organization as it can lead to higher earnings after tax. In addition, firms which are financed by debt enjoy tax shields since debt reduces the taxable income as compared to equity financing. Nuraobia and Joyeba (2019) noted that tax planning leads to improved financial planning in an organization. Firms may also consider other tax planning incentives to enjoy tax shield such as Issuing rural area investment allowances, timing to buy assets at the right time for claims of capital allowances and issuing exemptions of tax on interest on loans granted to any business by foreign companies in that country. According to Olabisi, Kojola, Olalejo, Ajayi and Hamzat (2019), “traditional approaches to tax planning fail to recognize that effective tax planning and tax minimization are two different concepts. This is because, in a World of costly contracting, implementation of tax minimizing strategies may introduce significant costs along non-tax dimensions. Therefore, the tax minimization strategy may be undesirable”. After all, a particularly easy way to avoid paying taxes is to prevent investing in profitable ventures. Thus, effective tax planning means not minimizing taxes, but maximizing after-tax rates of return on assets.

A Recent study by Omesi and Appah (2021) proposed a new perspective on treating corporate tax planning with the agency theory developed by Jensen and Meckling in 1976. Tax planning is defined as all activities designed to produce a tax benefit (Oluronkinse and Mamidu, 2021). Onyek-Iheme (2021) opined that tax planning is of wider public interest since it can affect the level of provision of public goods which can then contribute to social issues. Non-governmental groups such as Peter, Hamid and Ibrahim (2020), Christian Aid (2009), and Trade Union Congress (2009) also examined tax planning from the social justice perspective. Richard, Monday and Boney (2019) measured tax planning as the total book-tax differences (BTD) controlled for total accruals. Tax planning is seen as a veritable investment for shareholders because it reduces the tax burden that significantly weighs companies and shareholders (Chen, Chen, Cheng & Shevlin, 2010). Although,

shareholders may not promote the activities of tax planning because of the potential costs (Vu & Le, 2021).

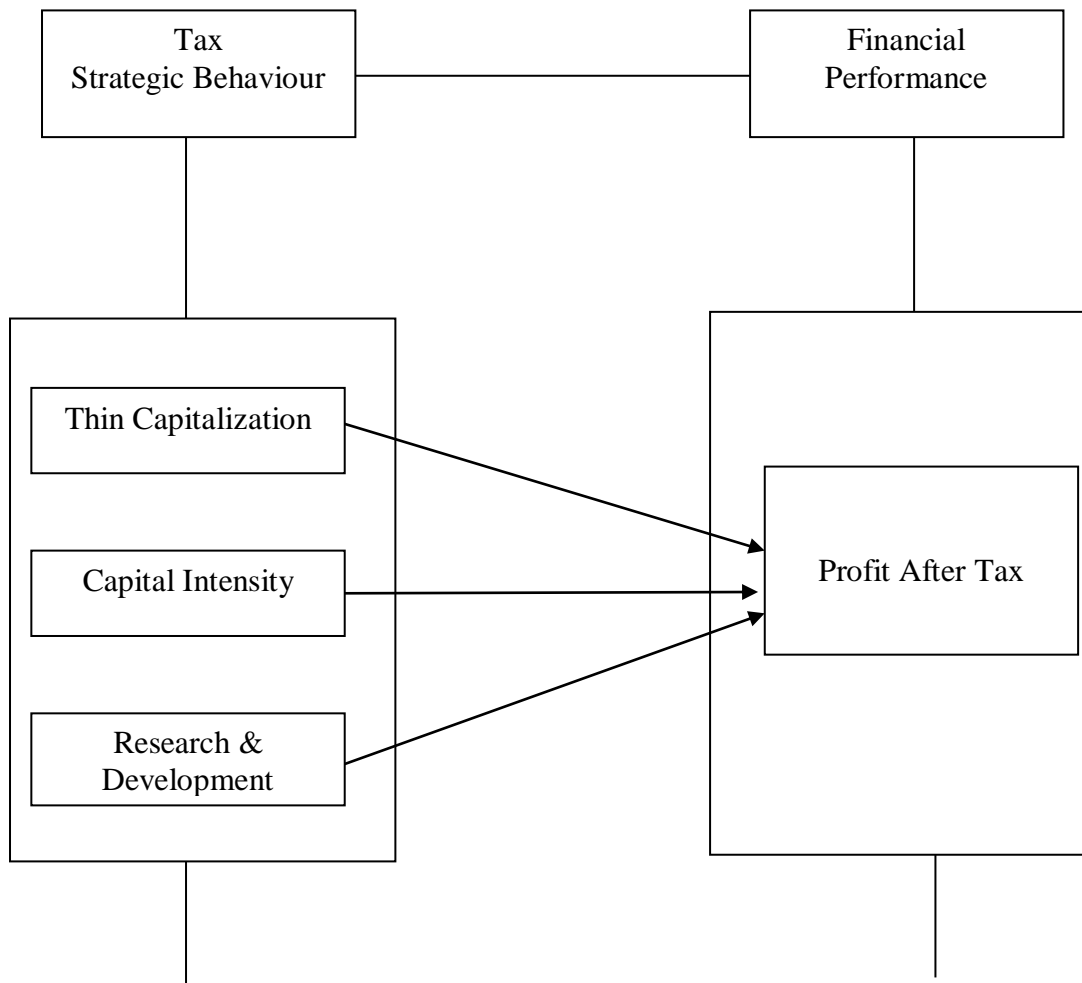
Research & Development

Research and development is the work a business conducts toward the innovation, introduction and improvement of its products and procedures. Simply, it is a series of investigative activities to improve existing products and procedures or to lead to the *development* of new products and procedures. Vu and Le(2021) explains that the organizations have to work hard for their survival in a competitive environment. For this, they have to efficiently allocate their assets. The resource based view theory suggests that the firms which have valuable resources and capabilities which are not possible to imitate and are and non-substitutable will have an advantage over other firms in terms of increased performance. Investment in valuable resources like research and development (R&D) plays a strong role in it. Millions of dollars are spent for R&D activities by the firms. The expense of this R&D is outweighed by the benefits it generates in the form of internal capability of innovation and enhanced performance.

The level of performance of a firm will be a function of its resources of R&D activities. These are the means of improving performance in this era of technology. The firms which allocate higher R&D expenditures are expected to earn more than those that do not. (Sunartl, Widjoja and Oktavioni, 2021).VvadiidLe(2021) wrote in his seminar work that the basic function of a business is to bring innovation to earn profits. Thus, in order to gain a competitive edge, more resources should be spent on the research and development (R&D) activities. Hayes and Abernathy (1980) explain their point of view that in order to succeed, the firms have an organizational commitment to compete on technological grounds. The firms therefore should offer superior products to earn profits in the long run. Research and development play a significant role to gain an edge over current and potential competitors of the firms. The specific nature of R&D expenses would determine its advantage. R&D expenditures allows the firms to prevent imitation by the rivals and earn supra normal or above average profits. (Woda, 2020), on the other hand, are opposite to this view.

They say that the level of research and development and the changes in it are not related to the profits. From the perspective of an investor, R&D costs are thought of as an expense whereas in reality, these are the investments which will generate future revenues in the form of profits. Vu and Le (2021)) contradicts this view and explained that, in accounting, a positive relation is present between R&D investments and firm earnings but finance predicts a negative relationship between them. A positive relation between investment in R&D and future returns is seen in accounting literature.

Most studies in accounting and finance explained a positive relationship between investment in R&D and future returns (Woda, 2021). Adejumo and Samyaruolu(2020) explained it more clearly that the performance of a firm will outweigh the costs of research and development. After reaching equilibrium, costs on R&D will be compensated by the benefits received. He further explained it that innovative ideas do not have tremendous effects. But eventually they prove to be firm specific assets. In the same way, R&D activity will result in a better performance of the firm. It should be noted that expenditure on research and development is an allowable expenditure for tax purpose hence companies capitalize on it to minimize its tax liability.



Source: Capital Intensity (Izevbekhci& Odon, 2018, Adagbieetal, 2019), Profit After Tax (Oeta, Kiai&Muchiri, 2019), Research & Development (Mbroh, Manney&Bonsa, 2019), Thin Capitalization (Chukwudi, Okonkwo&Asika, 2020).

Figure 1: Operational Conceptual framework of tax Strategies Behaviour and Financial Performance of listed Agro-Allied firms in Nigeria:

Empirical Evidence

Several efforts have been made by scholars to identify both the short-run and long-run relationship between tax strategic behavior and performance indicators. The discussion hereunder captures the diverse findings by various studies traversing both developed and developing economies on the effect, influence, association, impact and relationship between tax strategic behaviour and performance (Dharmarathna 2020). Most of the early studies analyzing the nexus between tax strategic behavior and performance focus on the experiences of developed economies and have found mixed results.

Ibilola, Nurudeen, Halima & Yazid (2023) studied tax aggressiveness and financial performance of listed industrial goods firms in Nigeria. The aim of the study is to examine the effect of tax aggressiveness on financial performance of listed industrial goods firms in Nigeria. The population of the study is made up of the entire listed industrial goods firms in Nigeria. A sample of 10 firms were

selected using a census sampling technique and data were collected using secondary source data collection from the annual report and accounts of the selected firms. Data for the study were analyzed using descriptive and inferential methods of data analyzed using stata 13 statistical software. Findings of the study revealed that GAAP effective tax rate has significant positive effect on ROA on the other hand, cash effective tax rate has negative significant effect on return on assets. Based on this, the study concludes that tax aggressiveness has significant effect on financial performance of listed industrial goods firms in Nigeria and therefore recommends that industrial goods firm should utilize the tax planning opportunities available to them so as to minimize their tax liabilities and improve their performance.

Abanom and Ebiaghon (2022). Examined corporate governance attribute and tax aggressiveness nexus in the Nigerian nonfinancial firms. Ex-post facto research design was adopted in the study. A sample of 20 firms were randomly selected and their financial records were used to obtain information from them. In this study, secondary data, by way of annual reports and account of the sampled companies in Nigeria and some relevant Nigerian Exchange fact books were used to collect data for 2017-2021. The data collected was analyzed using descriptive statistics with the use of panel least square as a technique for hypothesis testing, with the aid of E-views. Version 9 software. Results from the study indicated that a significant positive relationship was observed to exist between board independence and tax aggressiveness and a significant positive relationship was observed to exist between board gender and tax aggressiveness. Thus, it was recommended that the regulatory attributes should ensure that, the board size of nonfinancial firms in Nigeria should not be able to. Moreover, efforts should be made to ensure that non-executive directors should be more autonomous in the discharge of their oversight responsibilities. Lastly, more women should come on board since women are more risk averse/conservative than their male counterparts.

Omesì and Appah (2021) studied corporate governance and tax avoidance of listed consumer and industrial goods companies in Nigeria. The aim of the study was to empirically investigate the effect of corporate governance attributes on tax avoidance of quoted companies in Nigeria for the period 2015-2019. The study employed ex-post facto and correlational research design. The sample size of the study comprises of consumer goods companies that were determined using Taro Yamen formula. The data for the study was obtained from published annual financial statements of the sampled companies and descriptive statistics, Philip Perron Fisher unit root test, Karo residual cointegration test were used for data analysis while panel generalized method of moments for the test of hypotheses. The results from the panel generalized method of moment revealed that board size and audit committee do not significantly affect tax avoidance of listed firms in Nigeria while board independence, audit committee do not significantly affect tax avoidance of listed firms in Nigeria. Also, the control variables of leverage, capital intensity and return on asset suggested no significant influence on tax avoidance of listed firms expecting growth and firm size significantly affect tax avoidance of listed companies in Nigeria. The paper concluded that corporate governance attributes of board independence, audit quality and ownership do affect the level of tax avoidance practices in listed companies while board size and audit committee do not affect tax avoidance activities. Therefore, the paper recommends amongst others companies in Nigeria should improve on the level of governance practice in order to decrease corporate tax liability for better firm performance.

Akintoye, Adegbe, and Iheme-Onyeka (2020) investigated tax planning strategies and profitability of listed manufacturing firms in Nigeria for the period 2008 to 2017 using ex post facto research design.

The population of the study consisted of fifty-two (52) firms with a sample size of forty-six (46) firm calculated using Taro Yamen's model. The study employed secondary sources of data collection from the annual reports of the sample firms. The data obtained from the published financial statements was analysed with descriptive and inferential statistics. The multiple regression analysis revealed no significant association between tax planning and return on assets (ROA) of listed manufacturing firms in Nigeria. Their study further suggested that tax planning strategies have both positive and negative association on the financial performance of listed manufacturing firms in Nigeria.

Adejumo and Sanyaolu (2020) examined the effect of corporate tax planning on profitability of Nigerian listed deposit money banks. The study employed panel regression technique and it was found that tax planning had significant and negative effect on profitability. Kayode and Folajinmi (2020) analyzed the impact of corporate tax planning on financial performance of food and beverages companies in Nigeria. Data which covered the period of 2008 to 2018 analyzed with OLS and it was revealed that effective tax rate, capital intensity and thin capitalization had insignificant and negative effect on financial performance. Omesi and Appah (2021) investigated linkage between corporate tax planning and firm value among listed consumer goods companies in Nigeria between 2015 and 2019 analyzed with pooled ordinary least square. It was discovered that effective tax rate, tax savings and capital intensity had negative and insignificant effect on corporate firm value.

One of the ways of measuring financial performance is through Return on Equity (ROE). Tax planning had severally been measured by Effective Tax Rate (ETR) and tax savings (TAS). Intensity of capital (IC) and Firm Size (FMS) had served as control variables in previous studies (Nwaobia&Jayeoba, 2016).).In the theory of tax planning established by Hoffman (1961), it supported corporate bodies to plough back their returns for the firm's uses rather than paying tax saved to government coffer. Hoffman implored tax administrators to take advantages of loopholes in tax laws, policies and administration to use legal ways to reduce corporate tax liability in order to enhance performance. The theory concluded that entities should reduce tax liability to the barest minimum and be conscious of the fact that accounting income is not negatively affected (Hoffman 1961).

Correlative-description design using cross sectional method of analysis was conducted by Akintoye, Adegbe and IHEME-ONYEKA(2020), Kayode and Folajinmi, 2020). They established that intensive tax planning is associated with higher firm performance. On the other hand, the study reported that tightening of the tax system is positively associated with higher market performance of firms. The same positive association was reported between tax planning savings and performance for well-governed firms by Omodero and Ogbonnaya(2018). They concluded that corporate governance mediates the tax planning-firm performance relationship.

Timothy, Izilin and Ndifereke(2020) examined corporate tax planning, board compensation and firm value in Nigeria for the period 2008 to 2015. The study adopted ex post facto research design. The study population consisted of non-financial and non-oil and gas firms listed on the Nigerian Stock Exchange (NSE) while the sample consisted of 71 firms from the population of the study for the period under review. The data for the study was obtained from the published financial statements of sample firms. The dependent variable (return on assets) and independent variable (effective tax rate) while the control variables (firm size and leverage). The secondary data was analysed with descriptive and inferential statistics such as correlational and regression analysis. Their result suggests a positive

and significant association between tax planning practices and firm value of listed non-financial firms in Nigeria.

Chukwudi, Okonkwo and Asika (2020) investigated tax planning and firm value of listed consumer goods companies on the Nigerian Stock Exchange for the period 2009 to 2018. Their research employed ex post facto research design and the population comprised all consumer goods sector while a sample size of twenty one companies. The data for the study was obtained from secondary data from the published financial statements and accounts for the sampled firms. The data collected was analysed using descriptive and inferential statistics. The inferential statistics was guided by a panel multiple regression model. The empirical analysis revealed that tax planning proxied by effective tax rate negatively and significantly affects firm value while book tax difference showed a positively and significant influence on firm value.

Oeta, Kiai and Muchiri (2019) carried out a study of tax planning and financial performance of listed companies at Nairobi Stock Exchange for the period 2010 to 2017. Their study employed positivism research and exploratory research design. The data for this research was obtained from the published annual reports of the sampled companies and the data obtained was analysed with descriptive and inferential statistics of multiple regression analysis. The research outcome revealed that there is no significant statistical relationship between tax planning and corporate financial performance of listed manufacturing companies in Kenya. Hence the study concluded that tax planning does not influence the level of financial performance of quoted companies in Kenya.

Fagbemi, Olaniyi and Ogundipe (2019) conducted an investigation of corporate tax planning and financial performance of deposit money banks in Nigeria for the period 2006 to 2016. The study adopted ex post factor research design and the population consisted of all the listed banks on the Nigeria Stock Exchange for the period under review. The data for the study was obtained from the published annual reports of the sampled banks while the data collected were analysed using descriptive, diagnostic and inferential statistics. The inferential statistics was guided by pooled ordinary least square model. The findings revealed that effective tax rate negatively and significantly affects banks financial performance. The study further revealed that capitalization has a positive significant effect on financial performance while capital intensity and lease option suggested an insignificant effect on financial performance. They concluded that corporate tax planning influences financial performance of banks based on the tax planning strategy utilized.

Olachi, Onodaye and Ezeamenna(2020) examined corporate tax planning and firm value of manufacturing firms listed on the Indonesian Stock Exchange for the period 2014 to 2016. The study employed ex post facto and correlational research design. The study population consisted of all manufacturing firm while purposive sampling was employed to arrive at a sample size of 43 firms. Secondary sources of data were collected from the annual reports and accounts of the sampled firms. The secondary data was analysed using descriptive and inferential statistics of multiple regression analysis. The regression result revealed that tax planning (cash effective tax) has a negative influence on firm value.

Olanrewaju and Olayiwola (2019) determined the effect of corporate tax planning on financial performance of financial companies that were quoted on Nigeria Stock Exchange Market from 2007 to 2016. It was discovered that there is positive relationship between tax saving and financial

performance, while tax avoidance exerted negative effect on financial performance. Thanjunpong and Awirothananon (2019) examined the relationship between tax planning and financial performance in Stock Exchange of Thailand from 2014 to 2016. The study employed pooled regression technique for analysis and it was found that tax planning had positive and significant effect on financial performance.

Fagbemi, Olaniyi and Ogundipe, (2019) analyzed the effect of corporate tax planning on financial performance of systemically important banks in Nigeria. The result of the Pooled OLS showed that effective tax rate had negative and significant impact on financial performance while thin capitalization had positive and significant impact on the financial performance of SIBs in Nigeria. Dharmarathna(2020) studied the connection between tax planning strategies and profitability by focusing on manufacturing firms in Nigeria from 2008 to 2017. The result of the multiple regression indicated that tax planning had positive and significant effect on return on assets of the selected manufacturing firms in Nigeria.

Akagbom and Ejabu(2018) carried out an investigation of tax planning and firm value in Malaysia for the period 2014 to 2016. The study used ex post facto and correlational research design. The secondary data was obtained from the financial statements of 387 sampled firms. The dependent variable (firm value) and the independent variables (effective tax rate and book tax differences) while the control variables consisted of firm size, leverage, asset tangibility, firm age and dividend. Descriptive and inferential statistics was employed for the purpose of data analysis. The result of the multiple regression analysis showed that effective tax rate positively and significantly influences firm value while book tax difference revealed an significant negative association with value of a firm. The control variables of leverage, asset tangibility, dividend and age of firm showed a negative association. Their study concluded that effective tax rate suitably influences firm value.

Nwaobia and Jayeba(2019) analysed tax planning and firm value of companies listed on the Nigerian Stock Exchange for the period 2010 to 2016. The study utilized ex post facto research design. The population of their study comprised of all companies quoted on the Nigerian Stock Exchange and the sample consisted of eighty-nine (89) firms. The data was obtained from the published financial statement of the sample firms. The dependent variable was (TobinQ) while the independent variables (Effective Tax Rate and Tax Savings) and several control variables. The data collected from the firms were analysed using descriptive, diagnostic and inferential statistics. The inferential statistics was guided by a panel regression model. The result of the panel regression analysis suggested a negative association between effective tax rate and value of a firm while tax savings showed both positive and negative association with value of a firm. The control variable of firm size showed a positive association with firm value while leverage and capital intensity revealed a negative association with firm value.

Omodero and Ogbonnaya (2018) examined linkage between corporate tax and profitability of deposit money banks in Nigeria from 2006 to 2016. The result of the multiple regression analysis and t-test showed that company income tax had positive and significant effect on profit after tax of deposit money banks in Nigeria. Nurdayadi(2019) assessed the relationship between company income tax and financial performance of listed consumer goods companies in Nigeria from 2006 to 2016. The study employed ordinary least square regression technique to analyze data and it was found that corporate

tax had negative and insignificant effect on return on assets while Age and Risk were established to have positive and insignificant effect on return on asset.

Knesi(2018) investigated corporate tax planning and firm value of non-financial firms listed on the Nigerian Stock Exchange for the period 2004 to 2014. The study employed ex post facto and correlational research design with a population of one hundred and fifty-one (151) and a sample of fifty (50) companies using stratified sampling technique. The study used secondary sources of data from the published financial statements of the sampled companies and the data collected was analysed with econometric models such as stationarity test, panel cointegration test, vectorautoregression and granger causality. The dependent variable was (Tobin Q) while the independent variable (tax planning). The result showed that there is a significant non-directional causality between tax planning (ETR) and FirmValue.

Hewati and Kumale(2020) focused on the relationship between corporate taxation and bank outcomes among commercial banks in U.S. Based on the multi-regression analysis, tax rate was found to have significant effect on banks performance. The study of Akintoyeetal (2020) adopted pooled OLS technique to investigate the impact of corporate income tax on financial performance of listed companies in Nairobi Securities Exchange (NSE) in Kenya in 2015. It was established that corporate income tax had positive and significant relationship financial performance.

Knesl (2018) conducted a study on tax planning and firm value of listed consumer goods industrial sector in Nigeria between 2010 and 2014. Their study employed ex post facto research design with a population of 80 listed consumer goods firms and the sample consisted of ten (10) firms. The data for their study were obtained from the published financial statement and accounts of the ten sample companies for the period under review. The secondary data obtained were analysed using descriptive and inferential statistics. The inferential statistics was guided by a panel regression model. The result of the analysis suggests a positive significant association between effective tax rate, dividend and firm age on firm value. Also, the study revealed a negative association between firm size, tangibility and financial leverage on firm value.

Olabisietal(2019) investigated tax planning and firm value of listed non-banking and financial firms in Indonesia for the period 2010 to 2011. Their study employed ex post facto and correlational research designs. The population consisted of all listed non-banking and financial firms while the purposive sampling was adopted to arrive at a sample of 221 firms. The study collected data from the financial reports of sampled firms. The dependent variable of the study was firm value; the independent variable was tax planning, andboard diversity as the moderator variable. The data obtained from the annual report was analysed using descriptive and inferential analysis of multiple regression model. The result suggest that a positive association between tax planning and firm value. Also that board diversity increases the positive influence of tax planning and firm value.

Kawor andKportorgbi (2014) sought to ascertain the level of tax planning of firms and explore whether there is relationship between tax planning and firms' market performance. They employed 22 non-financial companies in Ghana Stock Exchange market over a twelve year period from 2000 using the longitudinal correlative design. The conclusions reached are that firms' tax savings decrease as tax authorities reduce the statutory corporate income taxrates. This means a reduction in tax leakages as a result of intensive tax planning of firms when tax authorities maintain low corporate income tax rates

.On the other hand, Kawor&Kportorgbi (2014) found that tax savings enhanced after tax earnings of Ghanaian firms but does not reflect in the firm's value. The result is consistent with the Agency theory notion that not all management strategies tends towards the achievement of wealth maximization objectives.

In a similar vein, the adoption of the Generalized Least Squares (GLS) regression model by Nurdayadi(2019) to examine the relationship between firms' value and tax planning with firm size, leverage, capital intensity, dividend and earnings management as control variables found a significant and negative relationship between firm value and tax planning also supports the Agency cost theory of tax planning. More so effects of research and development on earnings of agro-allied firms have been studied separately. Nwaobia and Jayeba(2019) experienced that a one percent increase in research and development investment resulted in one-quarter percent increase in earnings per share (EPS) for publicly traded agro-allied companies for the period 1989-98 in USA.

Vu and Le(2021), Nwaobi and Jayeba(2019), Desai & Dharmapala (2009), Chen, Chen, Chen and Shevlin (2010), Blouin and Larcker (2012), and Heitzma and Ogneva (2015), supported the assertion that tax savings enhances the financial performance of an entity; while Knesi(2018) found that tax savings enhanced after tax earnings does not reflect in the firm's value, this allied with the studies of Herwati and Kumala(2020 and Hidogatetal (2019). Also, Ftouchi and Ayed and Zemzem(2014) opined that larger companies endure higher effective tax rates (ETR) as supported by the studies of Heitzman and Ogneva (2015) and Belz, Hayan&Shavlin(2019). The findings of these studies corroborated the proposition of political cost theory. Finally, thin capitalization effect was found in the study of Chukwutietal (2020) in their conclusion that lower ETRs are significantly related to highly leverage companies, greater investment in fixed assets and lower investment in inventory.

In the light of the above, the study attempts to examine the relationship between tax strategic behavior and performance. To achieve the stated objectives, the following hypotheses are tested.

- H₀₁: There is no significant relationship between Thin capitalization and profit after tax of listed companies in Nigeria.
- H₀₂: Capital intensity does not significantly relate to profit after tax of listed companies in Nigeria.
- H₀₃: There is no significant relationship between research and development with profit after tax listed companies in Nigeria.

Methodological Clarification

This section shows the methodological consideration uses to estimate the long run equilibrating and short run dynamics relationship between tax strategic behaviour and financial performance, if any to achieve the set objectives of the study. The study applied a combination of ex-post factor and correlational research design. Osemi and Appah (2020) observed that ex-post factor research design is a systematic empirical study in the researcher does not in any way controls or manipulates the variables because the situation for the study already exists or has already taken place. Nwaiwu(2023) contend that correlational design shows the relationship between independent and dependent variables. These research designs were considered appropriate because they facilitate a comprehensive perspective of the major research questions and hypotheses in the study.

The target population consists of all the fifteen agro-allied listed on the Nigeria Exchange Group as at 31st December, 2023. This study utilized simple random sampling technique in selecting sample due to availability and completeness of data for the period under review (Maintoge, Adeghia&Ongeka-Ikeme, 2020). Time series data regarding the variable were source from the central bank of Nigeria statistical bulletin, annual central bank of Nigeria report, national Bureau of Statistics, World Bank Data Index, Federal Inland Revenue Service pro-mass, published annual reports and accounts of sample companies for the period.

Model Specification

Based on the theoretical underpinning and empirical review of related literature made in the empirical study (Dharomarithna, 2020), specifically, the model specification from related empirical evidence use by Omes and Appah(2021), Nwaiwu (2023) is adopted but we made modification. The empirical study generated three model to achieve the objectives and also answer the corresponding research questions. Consequently, the model specification is formulated in the functional form as thus:

$$PAT_{it} = f(TC_{it}, CIn_{it}, R\&D_{it}) \quad (i)$$

Converting the functional form into mathematical model as follows:

$$PAT_{it} = \beta_0 + \beta_1 TC_{it} + \beta_2 CIn_{it} + \beta_3 R\&D_{it} \quad (ii)$$

Expanding the mathematical model further into econometric model as thus:

$$PAT_{it} = \lambda_0 + \lambda_1 TC_{it} + \lambda_2 CIn_{it} + \lambda_3 R\&D_{it} + \mu_{it} \quad (iii)$$

Where the operational definition are:

PAT_{it} = Profit After tax 'i' for the period of time 't'

TC_{it} = Thin Capitalization 'i' for the period of time 't'

CIn_{it} = Capital Intensity 'i' for the period of time 't'

$R\&D_{it}$ = Research & Development 'i' for the period of time 't'

B_0, λ_0 = Constant 'i'for the period of time 't'

$B_1- \beta_3, \lambda_1- \lambda_3$ = Stochastic Terms 'i'for the period of time 't'

it = for the period of time

Apriori Expectation

In this empirical study, profit after tax is employ as proxy to measure the criterion variable which is financial performance. The employ measure of financial performance portray the increase in financial performance of the corporate entities under the Tin capitalization, capital intensity; research & Development of agro-allied companies in Nigeria.

In summary, the apripri expectation is stated as follows:

$$\beta_1-\beta_3>0, \lambda_1-\lambda_2>0$$

Data Analysis Techniques

The data analysis is performed with the aid of descriptive statistic techniques and ordinary least square regression analysis to explore the relationship between the variables as expressed by the hypotheses. Other diagnostic tests were conducted to establish validity such include;

Econometric Results and Discussion

This section covers the analysis of robustness tests for the model, descriptive statistics, regression and discussion of findings of the study.

Descriptive Statistics

To access underlying trend amongst employed data, the study employs the Descriptive statistics as a form of Univariate Analysis:

Table 1 Results of Descriptive Statistics of Profit After Tax (PAT), Capital Intensity (CPN), Thin capitalization (TCP), Research & development (RED) of selected agro-allied firms over the period of 2013 to 2023.

	PAT	CPN	TCP	RED
Mean	5916476.	42.41091	5.878182	154238.9
Median	5798609.	35.20000	5.250000	110508.0
Maximum	17573538	78.66000	8.240000	398604.0
Minimum	-971221.0	19.01000	4.410000	9480.000
Std. Dev.	5454107.	20.53919	1.585376	124842.6
Skewness	0.786058	0.570899	0.500395	0.584339
Kurtosis	2.921391	2.057007	1.432425	2.274738
Jarque-Bera	1.135626	1.005097	1.585315	0.867080
Probability	0.566764	0.604987	0.452640	0.648210
Sum	65081233	466.5200	64.66000	1696628.
Sum Sq. Dev.	2.97E+14	4218.584	25.13416	1.56E+11
Observations	11	11	11	11

The study observes from the above table that the profit after tax (PAT) displays a mean value of 5916476. On the predictor angle, the study observes that the value of capital intensity (CPN) is averaged at 42.41, while the thin capitalization (TCP) shows a mean value of 5.88 percent, while the expenditure on research and development is averaged at 154238.9. The study observes a uniform positive skewness between all employed variables. The Jarque-Bera probability level shows the presence of normal distribution of all employed variables. To confirm this, we proceed to the stationarity test in subsequent section.

Data Analysis

As stated in chapter three, the tests carried out in this study include Unit Root Test, Co-integration Test, Error correction model and granger causality test.

Unit Root Test

This is a test for stationarity in a time series. The results of the unit root tests on the variables of interest are presented in table 4.3 and 4.4 below;

Table 2: Unit Root Output (Augmented Dickey Fuller)

Variable	ADF T-statistics		Test Critical Values			Probability Level	Order of Integration
	At Level	1st diff	10%	5%	1%		
PAT	1.912548	-5.108370***	-4.420595	-3.259808	-2.771129	0.0051	I(1)
CPN	-0.589851	-4.765120***	-4.420595	-3.259808	-2.771129	0.0046	I(1)
TCP	-0.191768	-4.447778***	-4.420595	-3.259808	-2.771129	0.0019	I(1)
RED	2.178932	-6.483062***	-5.835186	-4.246503	-3.590496	0.0059	I(1)

*** sign at 10%, 5% and 1%, ** sign at 10% and 5%.

The above table shows that, at the 1, 5 and 10 percent level of significance, variables employed were not stationary at level (0). This led to the evaluation of stationarity at first difference (1). It was discovered that, all employed variables were statistically significant. This shows that employed variables possessed vital characteristics that converges around their respective mean and are not random walks. This makes the co-integration/long run test imperative.

Cointegration Test

The researcher proceeds to test the long run association/Relationship amongst employed variable i.e. in Nigeria.

Table 3: Cointegration Test (Johansen Cointegration)

Date: 12/14/23 Time: 11:10

Series: PAT CPN TCP RED

Sample: 2013 2023

Included observations: 11

Null hypothesis: Series are not cointegrated

Cointegrating equation deterministics: C

Automatic lags specification based on Schwarz criterion (maxlag=1)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
NPM	-3.119337	0.0431	-10.22959	0.0429
CPN	-4.303247	0.0221	-13.72336	0.0447
TCP	-2.529952	0.0414	-7.483339	0.0310
RED	-2.495071	0.0406	-7.201093	0.0389

*MacKinnon (1996) p-values.

Warning: p-values may not be accurate for fewer than 25 observations.

Intermediate Results:

	NPM	CPN	TCP	RED
Rho – 1	-1.022959	-1.372336	-0.748334	-0.720109
Rho S.E.	0.327941	0.318907	0.295790	0.360944
Residual variance	481.1733	66.61193	0.292921	1.32E+09
Long-run residual variance	481.1733	66.61193	0.292921	1.32E+09
Number of lags	0	0	0	0
Number of observations	10	10	10	10
Number of stochastic trends**	4	4	4	4

**Number of stochastic trends in asymptotic distribution

The above Engel and Granger output in table 3 shows that the tau-statistics of all employed variables have significant probability values that are below the 0.05(5%) threshold. This is further confirmed by the z-statistics, which also shows values below the 0.05 significance level. The aforementioned shows strong evidence of significant long run relationship between employed variables. This therefore leads the study to the error correction model.

Error Correction Model

The results of the Error correction estimation for models 1 recognizing their various levels of integration are presented in tables 4below;

Table 4: Error correction Model Result

Dependent Variable: NPM

Method: Least Squares

Date: 12/14/23 Time: 11:18

Sample (adjusted): 2013 2023

Included observations: 10 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-20.54076	73.86989	-0.278067	0.7921
CPN	-0.657071	1.297169	-0.506542	0.6340
TCP	17.75966	16.85232	1.053840	0.3402
RED	-0.000141	0.000344	-0.408335	0.6999
ECM(-1)	-0.130586	0.036113	-4.215448	0.0079
R-squared	0.660276	Mean dependent var	32.98000	
Adjusted R-squared	0.531503	S.D. dependent var	23.94312	
S.E. of regression	27.62814	Akaike info criterion	9.782400	
Sum squared resid	3816.572	Schwarz criterion	9.933692	
Log likelihood	-43.91200	Hannan-Quinn criter.	9.616432	
F-statistic	9.439820	Durbin-Watson stat	2.311084	
Prob(F-statistic)	0.000054			

The above Error Correction model shows that the Error Correction model displays the right negative sign. Its coefficient of -0.130586 shows that the short run disequilibrium to the long run can be accounted and adjusted for backwards by approximately 13.06 percent.

From the above table, capital intensity and research and development costs shows negative coefficient values of -0.657071 and -0.000141. While thin capitalization shows positive coefficient value of 17.75966. Overall, all predictor variables are insignificantly related to the criterion variable i.e. Net profit margin over the study period.

The R-square of 0.660276 reveal that about 66.03 percent of the total variation in the dependent variable are brought about by the employed independent variables whereas the remaining 33.97% are not explained but captured by the error term. More so, the Durbin Watson value of 2.311084 which is close to 2 reveals the absence of serial correlation in the model. This is further supported by the Prob(F-statistic) value of 0.000054 which is significant at 5%.

Test of Hypotheses

The hypotheses stated in section two is stated in this section. The test of significance of each variable is carried out at 5 per cent critical level. The t- statistic is employed to perform the test; hence the acceptance or rejection of any of the hypotheses is based on t-value of each of the regression coefficient of the explanatory variables.

Hypothesis One

H₀₁: There is no significant relationship between capital intensity and profit after tax of agro allied firms in Nigeria.

From the Parsimonious Error Correction model Output above, the computed t-statistics value of the regression coefficient of capital intensity is 1.450592 at 0.2066 probability level, which is greater than the 5 percent tabulated value (0.05); therefore, we do not reject (accept) the null hypothesis thus concluding that there is no significant relationship between capital intensity and profit after tax of agro allied firms in Nigeria. However, consistent with the results of Adeyemi, Omobade and Udofia(2019) who documented a positive relationship between capital intensity and profit after tax. Conversely, the results are not consistent with the findings of Yamiarsh (2018), Olagbenga, etal (2014) and are not in tandem with the agency theory prediction that more independent boards should ceteris paribus serve to align interests of principal and agent.

Hypothesis Two

H₀₂: There is no significant relationship between thin capitalization and profit after tax of agro allied firms in Nigeria.

From the Parsimonious Error Correction model Output above, the computed t-statistics value of the regression coefficient of thin capitalization is -1.937843 at 0.1104 probability level, which is greater than the 5 percent tabulated value (0.05); therefore, we do not reject (accept) the null hypothesis thus concluding that there is no significant relationship between thin capitalization and profit after tax of agro allied firms in Nigeria. Empirical results on thin capitalization and profit after tax are in tandem with that of Izedonnul (2016) Nwaiwu (2023) but contradict the findings of Olugbenga, etal (2014); Akagbam and Ejaba (2018), Nwaiwu(2023). It should however be noted that the aforementioned results study the relationship between the two using profitability at levels.

Hypothesis Three

H₀₃: There is no significant relationship between Research & development and profit after tax of agro allied firms in Nigeria.

From the Parsimonious Error Correction model Output above, the computed t-statistics value of the regression coefficient of Research and development is 4.636599 at 0.0057 probability level, which is less than the 5 percent tabulated value (0.05); therefore, we reject (accept) the null hypothesis thus concluding that there is a significant relationship between Research and development and profit after tax of agro allied firms in Nigeria. The empirical results are not supported by earlier empirical work of Dharmarathna (2020) Akintoye, Adegbe and Onyeka-Iheme(2020) as no previous study in relation to research & development has been found that incorporated profit after tax in analysis.

Concluding Remark and Recommendations

This empirical study explores the relationship between tax strategic behaviour and financial performance of listed agro-allied firms in Nigeria spanning from a period of 2013-2023. The major three hypotheses of research & development, thin capitalization, capital intensity and profit after tax were examined the sue of descriptive statistic techniques, ordinary least square regression analysis, augmented dickey fuller, Johansen cointegration and error correlation model for data analysis. The empirical resultsrevealed that there is a negative and significant relationship between thin capitalization, capital intensity and profit after tax while research &development revealed a positive and insignificantly relate to profit after tax. The study concludes that tax strategic behavior significant relate to financial performance of listed agro-allied firms for the period of 2013-2023 under review. Based on the empirical findings and conclusion, the paper made the following recommendations;

- (i) Policy makers should enforce proper penalties and sanctions that exhibit higher level of tax evasion and avoidance while agro-allied firms need to show good business ethics by complying with all relevant government tax laws and regulations.
- (ii) Firms (agro-allied) should put in place appropriate tax strategic behavior that will help decrease their tax liabilities and therefore improve their overall corporate financial performance/value.
- (iii) Thin capitalization as a source of finance should be expanded to maximize tax deductions and benefits as a tax planning tool.

Limitation and Suggestion for further studies.

The study examined the relationship between tax strategic behavior and financial performance only in agro-allied firms in Nigeria. Sectorial peculiarities mean that the results of the study may not be generalisable to other sectors. Therefore, future research may wish to extend analysis to other sector of the Nigerian economy. Moreso, since only three tax strategic behavior and one financial performance were examined in the study, future research may wish to examine the effect of other tax strategic behavior and financial performance such effective tax rate, tax-book difference, earnings per share and return on asset. Also, since the study utilized secondary data only in its analysis, further research may wish to design appropriate instrument for the collection of primary data so as to present evidence from the field.

References

- Abdul-Wahab, N. S., & Holland, K. (2012). Tax planning, corporate governance and equity value. *The British Accounting Review*, 44 (1), 1-14.
- Abdul-Wahab, N.S. (2016). Malaysian multi-national companies (MNC): permanent and temporary nature of tax planning. *Cogent Business and Management*, 3: 1248644.
- Adegbie, F.F., Akintoye, I. R. & Isiaka, B. (2019). Evaluation of integrated reporting and the value of listed manufacturing firms in Nigeria, *European Journal of Accounting, Auditing & Finance Research*, 7(7), 31-59.
- Adegboyegun, A.E., Alade, M.E., Ben-Caleb, E., Ademola, A.O., Eluyela, D.F. & Oladipo, O.A. (2020), Integrated reporting and corporate performance in Nigeria: Evidence from the banking industry, *Cogent Business & Management*, 7:1, 1736866.
- Adejumo, B.T., & Samyaru, W.A. (2020). Tax planning and profitability of Nigerian deposit many banks: Evidence from dynamic panel model. *Accounting and Taxation Review*, 4(2), 162-169.
- Adeyemi, S.B., Omubude, S.I. & Udofia, I.E (2019). Important testing of intangible assets and quality of financial reporting of Nigerian manufacturing companies. *Global Journal of Accounting*, 5(1), 1-15
- Akagbom, I.A., & Ejabu, F.E. (2018). Effects of thin capitalization and international law on performance of multinational companies in Nigeria. *Journal of Accounting and Financial Management*, 4(2), 47-58
- Akintoye, I.R., Adegbie, F.F. & Iheme-Onyeka, C.V. (2020). Tax planning strategies and profitability of quoted manufacturing companies in Nigeria. *Journal of Finance and Accounting*, 8(3), 148-157.
- Akintoye, I.R., Adegbie, F.F., & Onyeka-Iheme, V. (2020). Tax planning strategies and profitability of quoted manufactory companies in Nigeria. *Journal of Finance and Accounting*, 8(3), 148-157
- Bariyima, D. K. & Cletus, O. A. (2014). Tax planning and corporate governance in Nigerian banks. *European Journal of Business and Management*, 6 (19), 235 – 243.
- Belz, T., Hagen, D.V. & Steffens, C. (2019). Taxes and firm size: Political cost or political power? *Journal of Accounting Literature*, 42, 1-28.
- Bundala, N.N. (2012). Do Tanzanian companies practice pecking order theory, agency cost theory or trade-off theory. An empirical study in Tanzania listed companies. *International Journal of Economics and Financial Issues*, 2(4), 401-420
- 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.
- Chen, Z., Cheok, C. K. & Raziah, R. (2016). Corporate tax avoidance and performance: Evidence from China's listed companies *Institutions and Economies*, 8 (3), 61-83.

- Chukwudi, U.V., Okonkwo, O.T. &Asika, E.R. (2020).Effect of tax planning on firm value of quoted consumer good manufacturing firms in Nigeria. *International Journal of Finance and Banking Research*, 6(1), 1-10.
- Chytis, E., Tasios, S., Georgopoulos, I. &Hortis, Z. (2019). The relationship between tax avoidance, company characteristics and corporate governance: evidence from Greece. *Corporate Governance and Control*, 16(4), 77 – 86.
- Desai, M. A., &Dharmapala, D. (2009).Tax avoidance. *Review of Economics and Statistics*, 9(3), 537-546.
- Desasi, M.A. &Dharmapala, D(2016). Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics*, 76(1),145-176
- Dharmarathna, D.G.(2020). Corporate tax planning and financial performance of companies listed in Colomba Stock Exchange International Institute for Applied research Skies Educational, 3(2),1-15
- Dyreg, S. D., Hanlon, M., &Maydew, E. L. (2008).Longrun corporate tax avoidance. *Accounting Review*, 83 (1), 61-82
- Fagbemi, T.O., Olaniyi, T.A. &Ogundipe, A.A. (2019).The corporate tax planning and financial performance of systemically important banks in Nigeria.*EkonomikiHorizonti*, 21(1), 15-28.
- Fama, E.F. & Jensen, M.C.(1983). Separation of ownership and control.*Journal of law and economics*, 26 and foundations of organizational strategy. Michael C. Jensen, Harvard University Press.
- Ftouhi, K., Ayed, A. &Zemzem, A. (2014). Tax planning and firm value: Evidence from European companies. *International Journal of Economics and Strategic Management of Business Processes*, 4(73-78).
- Hanlon, M., &Heutzman, S.(2010). A review of tax research. *Journal of Accounting and Economics*, 50(2),127-178.
- Herwati, E.B. &Kumala, R. (2020). Analysis of the implementation of tax planning in efforts to save corporate income tax expense in PT GMT year 2017. *International Journal of trends in Accounting Research*, 2(1),130-139
- Hidayat, R., Wahyudi, S., Muharam, H., Shaferi, I., &Puspitasari, I. (2019). The improve level of firm value with liquidity, debt policy and investment in Indonesian emerging market, *RevistaEspacious*, 40(40), 1-9.
- Hoffman, W. H. (1961). The theory of tax planning. *The Accounting Review*, 36(2), 274-281.
- Ilaboya, O. J., Izevbekhai, M. O. &Ohiokha, F. I. (2016). Tax planning and firm value: A review of literature. *Business and Management Research*, 5 (2), 81-91.
- Izedonmi, P.F. (2016). A quick guide to project writing, for social and management sciences students, Zion Praise Publishers &Anointed Publishers.

- Izevbekhai, M.O. & Odion, A.O. (2018). Tax planning and firm value. *Nigerian Academy of Management Journal*, 13(1), 94-119.
- Jensen, M., & Meiklity, W. (1976). Theory of the firm, managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(1), 305-380
- Johnson, R., Rosenberg, J., & Williams, R. (2012). Measuring effective tax rates, tax policy centre. Urban Institute and Brookings Institute. <http://www.taxpolicycentre.org/taxmodel/income.cfm>.
- Kayode, O.O., & Folajinmi, A.F. (2020). Corporate tax planning and Financial performance of quoted food and beverages firms in Nigeria. *Journal of Finance and Accounting*, 8(6), 266-275
- Kirkpatrick, A.K. & Radicic, D. (2020). Tax planning activities and firm value: A dynamic panel analysis. *Advances in Taxation*, 27(103-123).
- Knesl, J. (2018). Capital Intensity and investment stock returns. *SSRN Electronic Journal*, 1(1), 1-62
- Lestari, N. & Wardhani, R. (2015). The effect of the tax planning on firm value with moderating board diversity. *International Journal of Economics and Financial Issues*, 5, 515-523.
- Ling, W. T. & Abdul-Wahab, N. S. (2018). Roles of tax planning in market valuation of corporate social responsibility. *Accounting, Corporate Governance & Business Ethics Research Article*, 5: 1482595, 1 – 16.
- Lisowsky, P., Lennox C., & Pittman, J. (2013). Tax aggressiveness and accounting fraud. *Journal of Accounting Research*, 51 (4), 739-778.
- Mais, R.G. & Patminigih, D. (2017). Effects of good corporate governance on tax avoidance of the company listed on the Indonesia Stock Exchange. *Journal of STEI Economics*, 26(2), 230-243.
- Mappadang, A. (2019). Do corporate governance mechanism influences tax avoidance and firm value? *International Journal of Academic Research in Business and Social Sciences*, 9(10), 203-217.
- Munnick, & Noga, T. (2010). Do corporate governance characteristic influence tax management. *Journal of Corporate Finance*, 16, 703-718.
- Nnamani, J. N. & Onyekwelu, U. L. (2017). Effect of sustainability accounting and reporting on financial performance of firms in Nigeria's brewery sector. *European Journal of Business and Innovation Research*. 5 (1), 1-15.
- Nurdayadi, R.A.B. (2019). The impact of deferred tax expense and tax planning toward earnings management and profitability. *Journal Bisnis Dan Akantansi*, 21(2), 21-30
- Nwanji, T. I. & Howell, K. (2007). Shareholdership, Stakeholdership and the Modern Global Business Environment: A Survey of the Literature. *Journal of Interdisciplinary Economics*, 18 (4), 347-361.

- Nwaobia A.N., Kwarbai, J. D. & Ayodeji A. T (2015). Corporate risk management and firms' value: Empirical evidence from selected listed manufacturing companies in Nigeria. Program on policy, Conflict & Strategic studies International Journal series. 2(1).
- Nwaobia, A. N. & Jayeoba, O. O. (2016). Tax planning and firm's liquidity. IJRD Journal of Business Management. 2 (10), 1-22.
- Nwaobia, A., Kwarbai, J., & Ogundajo, G. (2016). Tax Planning and Firm Value: Empirical evidence from Nigerian consumer goods industrial sector. Research Journal of Finance and Accounting, 7(12), 172-183.
- Oeta, S.M., Kiai, R. & Muchiri, J. (2019). Influence of tax planning on financial performance of manufacturing companies listed at Nairobi Securities Exchange. International Journal of Research in Business and Social Sciences, 8(6), 262-269.
- Ogundajo, G. O. & Onakoya, A. B. (2016). Tax planning and financial performance of Nigerian manufacturing companies. International Journal of Advanced Academic Research for Social and Management Sciences, 2 (7), 64 – 79.
- Olabisi, J., Kajola, S.O., Olalejo, D.A., Ajayi, J.A., & Hamzat, I.A. (2019). Corporate tax planning and performance of Nigeria listed oil and gas firms. The Journal of contemporary Economy, 4(1), 31-36
- Olachi, C.R., Onodugo, I.C. & Ezeamanna, C.M (2020). Recent developments and trends in the banking sector in Nigeria. Academic leadership, 21(9), 28-46
- Olugbanga, O.M., Olusola, A.J., Zachaeus, S.A., & Oluwagbemiga, O.E. (2014). Financial reporting and compliance of important of non-current assets on Nigerian banks. European Journal of Accounting, Auditing and Finance Research, 2(2), 18-35
- Olurankinse, F. & Mamidu, A.I. (2021). Corporate tax planning and financial performance of development banks in Nigeria. European Journal of Accounting, Auditing and Financial research, 9(5), 53-72.
- Omesi, I. & Appah, E. (2021). Corporate tax planning and firm value of listed consumer goods companies in Nigeria. IOSR Journal of Business and Management (IOSR-JBM), 23(2), 42-51
- Omesi, I. & Appah, E. (2020a). Tax structure and economic growth in Nigeria: An auto regressive distributive lag evidence from 1980 to 2018. International Journal of Innovations in Marketing and Accounting Research, 8(1), 108-124.
- Omesi, I. & Appah, E. (2020b). Taxes and income inequality in Nigeria: Cointegration and error correction mechanisms evidence from 1980 – 2018. International Journal of Innovations in Management and Accounting, 8(2), 1-17.
- Omodero, C.O. & Ogbonnaya, A.K. (2018). Corporate tax and profitability of deposit money banks in Nigeria. Journal of Business and Management, 23(2), 42-51

- Onyek-Iheme, C.V.C(2021). Tax planning strategies and liquidity of manufactory companies quoted in Nigeria. *American Journal of Humanities and Social Sciences research (AJHSSR)*, 5(2),138-148
- Peter, A., Hamid, T.K., & Ibrahim, M. (2020). Board attributes and tax planning of listed nonfinancial companies in Nigeria. *International Journal of Accounting and Finance (IJAF)*, 9(1),50-61
- Razali, M.W.M., Ghazali, S.S., Lunyai, J. & Hwang, J.Y.T. (2018). Tax planning and firm value: Evidence from Malaysia. *International Journal of Academic Research in Business and Social Sciences*,8 (11), 210-222.
- Richard, D., Monday, E., & Boney, E.U.(2019). The impact of corporate tax planning on financial performance of listed industrial firms in Nigeria. *Journal of Accounting and Financial Management*, 5(4), 21-32
- Salaw, R.O. &Adedeji, Z.A. (2017). Corporate governance and tax planning among non-financial quoted companies in Nigeria. *African Research Review: An International Multi-Disciplinary Journal*, 11(3), 42-59.
- Salawo, R.O., Ogundipe, L.O. &Yeye, O. (2017). Granger causality between corporate tax planning and firm value of non-financial quoted companies in Nigeria. *International Journal of Business and Social Sciences*, 8(9), 91-101.
- Shaheen, S. &Malik, Q. A. (2012).The impact of capital intensity, size of firm and profitability on debt financing in textile industry of Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 3 (10), 1061-1066.
- Soufiene A., Khoula A., & Mohamed A. O. (2016). Tax optimization and the firm's value: Evidence from the Tunisiancontext, *Borsa Istanbul Review*, 16 (3), 177-184.
- Sunarti, S., Widjaja, B., &Oktavioni, R.M.(2021). The effect of corporate governance on tax avoidance.The role of profitability as a mediating variable. *Journal of Asian Finance, Economics and Business*, 8(3), 10-21
- Timothy, O.U., Izilin, M.O. &Ndifereke, B.A. (2020).Corporate tax planning, board compensation and firm value. *Accounting and Taxation Review*, 4(3), 11-28.
- Uchendu, O., Ironkwe, U.I. &Nwaiwu, J.N. (2016).Corporate governance mechanism and tax planning in Nigeria. *International Journal of Advanced Academic Research*, 2(9), 45-59.
- Umobong, A. A. &Agburuga, U. T. (2018).Corporate tax and corporate social responsibility of firms in Nigeria. *Research Journal of Finance and Accounting*, 9 (10), 8 – 25.
- Vu, T.A.T. & Le, U.H.(2021). The effect of tax planning on firm value: A case study in Vietman *Journal of Asian Finance, Economics and Business*, 8(2),0973-0979
- Woda, G.M. (2021). Effect of internal tax planning on the financial performance of multinational corporations in west Africa. *Bingham International Journal of Accounting and Finance (BIJAF)*, 2(1),1-15

- Yuniarsh, N., (2018). The effect of accounting conservatism and corporate governance mechanism on tax avoidance. *Academic Research International*, 9(3),68-76
- Zhang, C., Cheong, K. C., Rajah, R. (2016). Corporate tax avoidance and performance: Evidence from China's Listed Companies. *Institutions and Economies*, 8(3),61-83.
- Zhu, N., Mbroh, N., Monney, A. & Bonsu, M.O.A. (2019). Corporate tax avoidance and firm performance. *European Scientific Research*, 15(7), 61- 70.