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**MODERATING EFFECT OF PERFORMANCE ON TAX INCENTIVES AND
GROWTH OF LISTED AGRICULTURAL FIRMS**

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Abstract

This study examines the influence of tax incentives on the growth of listed agricultural firms in Nigeria, and how performance moderates the effect. The study covered the period 2012 to 2021 and the 10-year data were analysed using descriptive statistics and Partial Least Square Structural Equation Modelling (PLS-SEM) technique. The empirical results indicated a significant effect of tax incentives on the growth of listed agricultural firms. However, the moderating effect of performance was found to be insignificant. The relationship between tax incentives and performance of agricultural firms was also insignificant. The study concluded that sustaining tax incentives granted to the agricultural sector will influence the growth of the sector.

Keywords: Agricultural Firms, Tax incentives, Performance, Firm Growth, PLS-SEM.

Introduction

The agricultural sector occupied an important role in the Nigerian economy at independence in 1960 when the country depended on it for economic growth, employment, raw material for industries and foreign exchange. However, events that happened shortly after independence such as the civil war that happened between 1967 to 1970 and the series of uncertainties that heralded it; food supply shortage leading to declining foreign exchange earnings; and the oil boom of the 1970s that triggered rural-urban migration, all negatively affected agriculture in Nigeria. The sector has not recovered from the setback till now. For instance, imports of foods and raw materials are ever increasing. Food import in 1970 is only 7.6% of total imports (The Scandinavian Institute of African Studies, 1983), whereas in 2021 food accounted for 14.2% of total imports in Nigeria (World Bank, 2022).

Although the potential for agriculture in Nigeria is enormous, considering the country's population and its 70.8 million hectares of arable land (Sasu, 2022), the sector is faced with numerous challenges. It suffers the same fate as others in terms of poor power supply, transportation and access to finance problems; it also has peculiar problems like uncertain weather conditions (Oghoghomeh, 2014), post-harvest losses due to poor preservation methods, poor farming techniques, insecurity in rural areas and rural-urban migration. In order to support the development of agriculture, the government over the year have designed a number of policies and programmes for the agriculture sector including the provision of tax incentives. Philip (2006) describes tax incentives as a thoughtful lessening of tax obligations enabled by the authorities to encourage taxable persons and companies to

act in a certain manner. Tittle (2006:404) put this in an illustration, *“Tax incentives usually imply or say outright, ‘We, the government, want you to do X, and if you do, here’s the tax benefit you’ll get.’”*

Since there are conditions to be met, in terms of the type of asset acquired, area of operation or source of finance, for taxpayers to enjoy tax incentives, firm management has to work towards meeting the conditions in order to enjoy some form of tax incentives. For example, for a company to enjoy capital and investment allowances incentives, it has to acquire a qualifying asset that when put to proper use can boost the firm performance. Tax incentives are related to financial performance because they are reduction or offset of tax liability which is based on the firm performance. Even the extent of tax incentives enjoyed in a pioneer period when companies get breaks from paying income tax and those of export processing zones are measured by the amount of taxes waived.

Tax incentives are sometimes confused with non-tax fiscal incentives. For example, some authors considered the exemption of interests on loans granted to agricultural businesses by banks from income tax as a tax incentive for the agricultural sector (Ironkwe & Nnaji, 2017; Oghoghomeh, 2014). Although the interest itself is a tax-exempt item in the books of agribusinesses, exemption of tax on such interest enjoyed by banks should not be classified as tax incentives for the agricultural sector, at best, non-tax fiscal incentives. Similarly, incentives like the exemption of Value Added Tax on agricultural products can be mistaken as tax incentives for agriculture, whereas the burden of VAT is borne by the consumer. Therefore, the tax incentive, in this case, is granted to the consumer, but the ripple effect of the exemption may result in more demand, which is a non-tax incentive

to the agricultural sector. However, the exemption of agricultural equipment from VAT can be classified as a tax incentive for agriculture, because the consumer of the equipment is the agricultural firms whose VAT burden was relieved.

Tax incentives are granted to companies to encourage savings and investments - the impetuses that spur 'organic' growth in business, unlike the 'inorganic' growth that arises as a result of business combinations. Growth, therefore, is a process of internal development and since every firm is unique, a single metric for measuring growth is inappropriate.

Statement of the Problem

Statistics show that the agricultural sector is the highest employer of labour in Nigeria, engaging over 36% of our workforce and having contributed an average of 24% of the GDP over the years (Oyaniran, 2020). However, these data reflect largely the informal agricultural sector, because the informal sector employs over 74% of Nigeria's labour force (Ohnsorge & Yu 2022) and contributes up to 65% of total output (IMF, 2017). Therefore, the five listed agricultural firms on the Exchange (NGX) contributed less in terms of employment, output and revenue when compared to the informal agricultural sub-sector. However, the tax incentives granted to the agricultural sector should impact more on the big firms in the sector, such as those listed, because big firms are better positioned to take advantage of government policies (Francis, 2014).

Theories like Gibrat's Law suggest that business growth takes a stochastic process which implies that fiscal policies such as tax incentives, features of firms like size, location etc. and even performance may not necessarily affect growth. Some researchers (Jang & Park, 2011; Goddard, Molyneux &

Wilson, 2004) are of the view that performance and growth are mutually exclusive because they are two rival objectives to the firm. This could be true in terms of the trade-off between profit maximization and shareholders' maximization objectives. However, researchers like Yoo & Kim (2015), Lee (2014), Coad (2007), and Gupta (1981) presented evidence in support of a significant relationship that exists between performance and growth. This evidence suggests that business growth enables firms to reduce costs through economies of scale, and delivery of efficient service through learning curves. The relationship between growth and performance thus remains mixed and complex.

Given the role of agriculture in job creation and provision of inputs to other sectors, the importance of business growth when assessing the impact of tax incentives cannot be ignored, because tax incentives are granted to encourage savings and investment (Aguolu, 1999) – the key impetuses of growth. The ensuing questions therefore are: Are tax incentives having any influence on the growth of listed agricultural companies? And does performance play any role in the connection between tax incentives and growth?

Objective of the Study

The objective of this study is to determine the moderating effect of performance on the effect of tax incentives on the business growth of listed agricultural firms in Nigeria. The study specifically looked at the effect of tax incentives on growth, the impact of tax incentives on performance, and the influence of tax incentives on growth where performance is a moderating variable.

Literature Review

This section discusses the theoretical framework, empirical review and conceptual framework of this study.

Theoretical Foundation

This study was underpinned by expediency theory, a theory that asserts that every tax scheme must look at practicability as the only consideration in choosing a tax system (Bhartia, 2009). Expediency gives consideration to current ideas of justice, social forces, custom, and current agitation. Each of these factors may predominate others at a time, however, they are never entirely disregarded in adopting a tax policy under this theory. Policymakers and tax administrators working under the pressure of complex social and economic forces may push aside long-run considerations of social justice and succumb to factors of immediate and practical importance (Chigbu et al., 2012). Governments try to raise revenues in the most practicable way, even when this may involve much injustice and the taxes may seem irrational as well as inequitable, but it exists because circumstances warrant it (Buehler, 1936). Expediency, therefore, is embedded in taxation and indeed a practical approach.

Empirical Literature Review on Tax Incentives and Growth

Studies have shown mixed results of tax incentives' impact over the years. Siyanbola, Adedeji, Adegbe, and Rahman (2017) evaluated the impact of tax relief on the expansion of industries in Sub-Saharan African countries focusing on Ghana and Nigeria. According to the findings of the Ordinary Least Square regression analysis, tax incentives have a positive effect on economic and industrial development, implying that increasing tax incentives to key areas of the African economy would boost the continent's GDP. The study

recommended that Sub-Sahara African countries should provide more incentives to key industries, however, this generalization could be faulty because of the choice of the case studies. Nigeria and Ghana have similarities in terms of history and social-cultural system compared to other countries in east and southern Africa. Hence, case study selection on the industrial growth of a diverse territory like Africa requires consideration of climate, access to the world, security and stage of development of the countries to ensure a balanced representation.

Fayitimi, Temitope, Akeem, and Oladele (2016) examined the effects of tax incentives on the rise of small and medium-sized businesses in developing economies, with specific attention to Nigeria. The descriptive methodology was used in the study, and primary data for the study were collected through questionnaires, interviews, and observations. Analyses of the data using ordinary least square regression found that tax reliefs are effective tools in the hands of the authorities to spur the growth and development of SMEs as there is a strong link between taxation and the growth of SMEs. The study recommended a tax holiday and other start-up-friendly policies for SMEs. However, the studied sample of 100 respondents from the manufacturing sector in the Osun State Industrial Area could be a limitation.

Twesige and Gasheja (2019) used the commercial District in Kigali (Nyarugenge) as a case study to examine the effect of tax incentives on the expansion of Small and medium enterprises in Rwanda. The studied population consisted of all the 49,000 registered small-scale enterprises in the district, out of which 136 samples were drawn for the study. The results of the multiple regression analysis revealed that tax breaks have a strong significant and positive

connection with the development of small and medium-sized businesses in Rwanda. The study suggested that authorities should design programmes that target the sustainable growth of SMEs. The study has found a significant result on the impact of tax incentives on SMEs in Rwanda. However, the growth measures used are assets and retained earnings which may not be appropriate for low asset-based businesses like a franchise. More so, the sample size of 136 for a population of 49,000 is rather too small, even though the study justified it with the sample size formula of Silovin and Yemen.

Still on entrepreneurship, Adegbe, Babatayo, and Siyanbola (2020) examined the impact of tax breaks on the expansion of small and medium-sized enterprises in Nigeria's informal sector. The survey design was used to study 386 selected SMEs from a population of 2,708 registered with SMEDAN (Small and Medium Enterprises Development Agency), 772 questionnaires were distributed using a stratified and proportionate quota sampling procedure, with an 88% retrieval rate. The findings revealed that tax incentives have a strong effect on both the gross margins and tangible assets of Nigerian SMEs in the informal sector. Although the study was restricted to SMEs in the informal sector, it revealed interesting findings on tax incentives' connection to growth and performance. The study recommended that policies be put in place to bring more SMEs into the tax net by enticing them with tax incentives.

Elsewhere, to test the effectiveness of the Finnish tax reforms implemented in the mid-1990s, Harju & Kosonen (2013) looked at the effect of tax breaks on the business activity of small business owners in Finland. They studied the output of entrepreneurs before and after the tax reform which reduced income tax rates and increased

incentives for tax planning for small business owners and unincorporated firms. A natural experiment approach was used to estimate the causal impact of the reforms using a sample of 16,516 partnership firms and 36,957 corporations. Since the reform affected only unincorporated businesses, the control group in the experiment comprised of corporations, but of similar size, stage of development, industry and market share. Another important ground that enabled the workability of natural experimentation in this study was the fact that no other modification was made to the tax system that affected these two groups of firms at the same time during the reform period. The results revealed that entrepreneurs react to tax incentives along both real (effort to move income within the firm to bring about saving, investments, labour demand and purchase of assets) and tax avoidance (increased pay and fringe benefits) margins. However, the results showed that avoidance margins are more elastic. Reduced tax rate was also found to increase output and turnover of firms, specifically, a 10% decrease in tax, lead to a 1.5% increase in output. Deduction from this study shows that tax incentives influence growth positively and reduce tax avoidance practices if the firm is concerned about future consumption.

Ghazanchyan, Klemm, & Zhou (2018) reviewed tax incentives in Cambodia to evaluate their costs and benefits, as well as their potential for attracting investment and promoting the diversification strategy. The study found that although tax holiday differs in practice around the world, offering a tax deferral rather than a tax exemption could not be as impactful. The study also found that taxes like a high withholding rate on dividends implied a high effective tax rate for foreign investors. The study concludes that a low tax rate, high withholding tax and

complicated incentives are unlikely to be optimal. They, therefore, recommended that the government needs to maintain a competitive tax system while safeguarding revenues, thus tax reform in Cambodia should be conceived as a set of tightening and loosening elements. In light of the mixed empirical results on the effect of tax incentives, the study's recommendation could be the optimal position.

Oghoghomeh (2014) did a theoretical valuation of the relevance of tax incentives to agribusinesses in Nigeria. The study concluded that reduced tax rate and tax holidays may not produce the desired result however investment tax credit might. To be effective, Oghoghomeh recommended that tax incentives be targeted at upcoming agribusinesses. The study revealed interesting details of tax incentives available for agribusiness in Nigeria, however, the result is based on a literature review without quantitative proof to substantiate it. Oghoghomeh's studies, just as earlier studies of the Central Bank of Nigeria [CBN] (2013), considered the exemption of banks' interest earnings from loans granted to agricultural businesses as tax incentives to the agricultural sector. Whereas it is an incentive to the banks because the reduction of tax liability is enjoyed by the bank in this case.

Nivievskiy (2018) examined the tax incentive and agricultural productivity growth in Ukraine covering the period 1995 to 2014. The study of the 165,777 observations drawn from the State Statistics Committee of Ukraine found that the effect of tax incentive – measured by agricultural Value Added Tax and Fixed Agricultural Tax benefit – vary from agricultural producer and sub-sector to another. Overall

tax incentives affect positively agricultural productivity growth but are very cost inefficient. Total-Factor Productivity (TFP) growth was used to measure productivity growth, which is a measure of efficiency that evaluates the extent to which the resources put into a production process can generate output, i.e. the output-to-input ratio.

Kiabel, Nangih & Oyedokun (2018) studied the impact of tax disincentives on enterprise growth in Nigeria. The sample for the study consisted of 100 respondents selected from six Nigerian quoted petroleum marketing corporations. Data collection was through questionnaires and the annual reports of companies. Pearson Product Moment Correlation as well as Least Squares Regression techniques were used to analyse the data. The authors adopted Return on Total Assets and Operating Profit Margin as measures of business growth. The results of the study revealed a substantial but negative association between tax disincentives and business growth in Nigeria. The study, therefore, recommended among others the repeal of the provisions relating to excess dividends tax and minimum tax in the Companies Income Tax Act. Although the study examined tax disincentives, the point of reference is that the measures of business growth adopted, return on total assets and operating profit margin are performance measures, not growth, which could be a limitation.

Conceptual Framework and Hypotheses Formulation

This study aimed to evaluate the relationship between tax incentives and growth, and how performance moderate that relationship. The conceptual framework presented in Figure 1

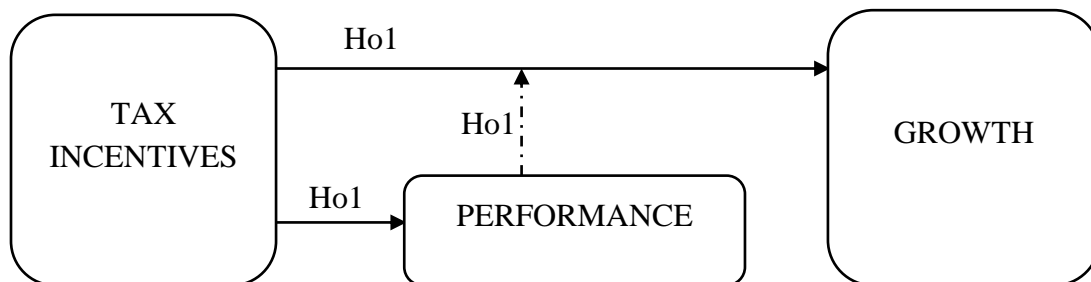


Figure 1. Conceptual framework

To achieve the objective of this study, the following hypotheses were formulated.

Ho1: There is no significant impact of tax incentives on the growth of listed agricultural firms in Nigeria

Ho2: There is no significant influence of tax incentives on the performance of listed agricultural firms in Nigeria.

Ho3: There is no significant moderating effect of performance in the relationship between tax incentives and the growth of listed agricultural firms in Nigeria.

Methodology

This study adopted the ex-post-facto design.

Population and Sample

The population of this study comprised all the five (5) agriculture sector companies listed on the Nigerian Stock Exchange (NGX) as at 1st August, 2022. In order to focus on companies that have the required data such as disclosure of number of employees and most importantly stayed on the exchange during the 10-year period of the study, the study adopted the purposive sampling technique. More so, to avoid missing data, consistency in preparing annual reports is also important for the study.

Based on these three criteria (i.e. companies that disclose number of employees in their annual reports, stayed for over 10 years on the exchange and prepare reports

consistently during the period), three (3) companies were selected as samples for the study.

Data Analysis Technique

Descriptive analysis and Partial Least Square Structural Equation Modelling (PLS-SEM) were used to analyse the data. PLS-SEM allows for the calculation of multiple and interconnected dependent interactions between variables at the same time, as well as the use of unobserved variables. Using PLS-SEM analysis in this study makes incorporation of formative measurements into a structural equation model much simpler. Indicators are called formative indicators when they represent different aspects that make up the latent variables, in other words, they formed the latent variable. Formative measurements have high practical relevance to tax incentives because every form of tax incentive, be it capital allowance, loss relief or interest incentive captures a specific aspect of the latent construct 'Tax Incentive'.

PLS-SEM Model Discussion

The proposed model for the relationship between tax incentives and growth is given in Figure 2. The model was framed using latent constructs, TAXINC, PERF and GROWTH (which represent tax incentives, performance and growth respectively) to show the structural connection between the variables.

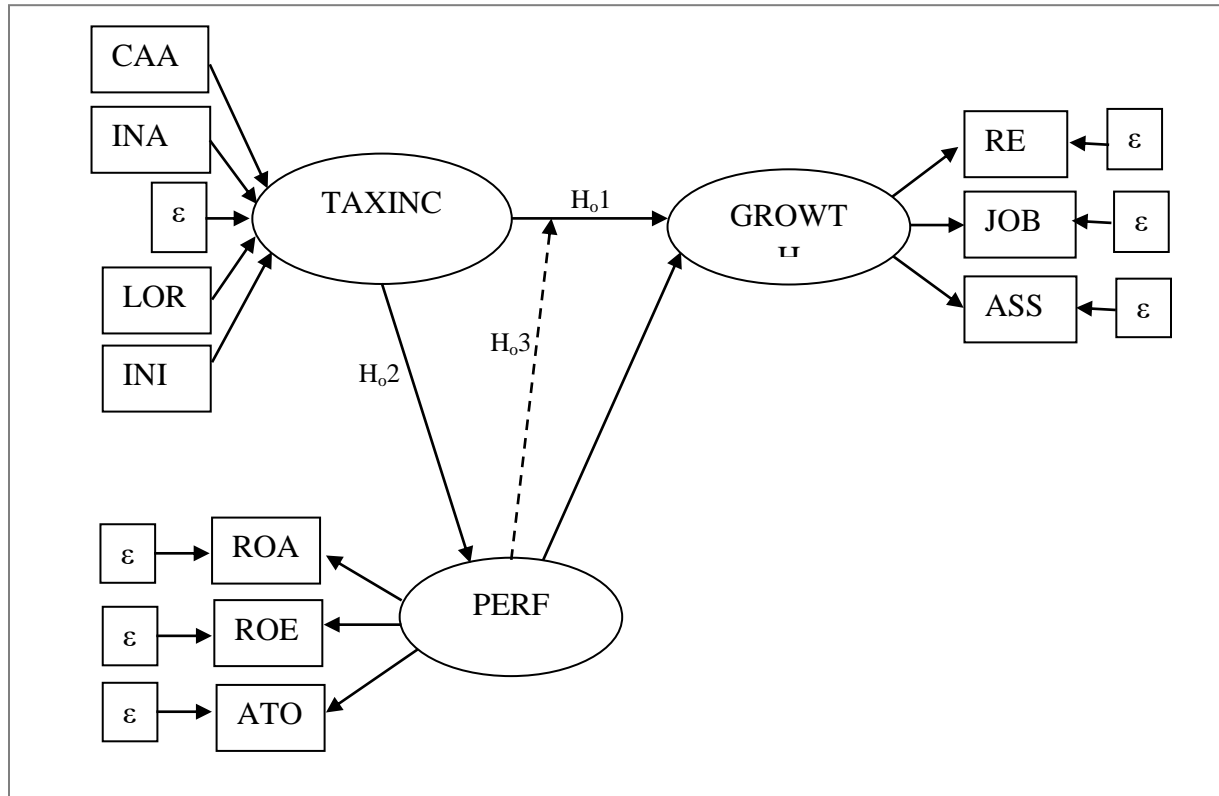


Figure 2. Structural Diagram

From the diagram in Figure 2, the latent construct, growth (GROWTH) is designed with reflective indicators of revenue (REV), employment (JOB) and assets (ASS); while the latent construct, tax incentives (TAXINC) has capital allowance (CAA), investment allowance (INA), loss relief (LOR) and interest incentive (INI) as formative indicators. Whereas the moderating variable, Performance (PERF), also a latent construct has return on assets (ROA), return on equity (ROE) and asset turnover (ATO) as its indicators. A straight arrow from the latent variable to the indicator variable (as shown between GROWTH and REV, JOB and ASS; as well as between PERF and ROA, ROE and ATO) indicates that the indicator is reflective, i.e.

the indicator reflects the latent variable. More so, each of the reflective indicators is error-prone. Whereas a straight arrow from an indicator variable to the latent variable (such as between CAP_ALL and TAX-INC above) indicates that the indicator is formative. Unlike reflective indicators, formative indicators themselves are assumed to be error-free, however, the error term in the formative construct is intended to cover all additional construct causal factors that were not taken into account by the model (Diamantopoulos & Siguaw, 2006). The dashed arrow linking PERF to the straight arrow linking TAXINC to GROWTH is the moderating effect line. The definitions of these variables are presented in Table 1.

Table 1. Variables and Measurement

Variable	Type	Measurement	A priori Expectation
Tax Incentive (TAXINC)	Latent exogenous	Capital allowance, investment allowance, loss relief and interest incentive	Positive
Capital Allowance (CAA)	Indicator of capital allowance	Capital intensity i.e. fixed assets/total assets	
Investment Allowance (INA)	Indicator of capital allowance	Natural log of 10% of the cost of additional plant	
Loss Relief (LOR)	Indicator of capital allowance	1 or 0 to reflect loss year and non-loss year respectively	
Interest Incentive (INI)	Indicator of capital allowance	Natural log of interest on debt financing	
VAT Incentives (VAI)	Indicator of capital allowance	Natural log of 5/105 and 7.5/107.5 of additional machinery for years 2012-2019 and 2020-2021 respectively	
Performance (PERF)	Latent endogenous	ROA, ROE and ATO	Positive
Return on Assets (ROA)	Indicator of performance	Profit before interest and tax / Total assets	
Return on Equity (ROE)	Indicator of performance	Profit before interest and tax / Equity	
Asset Turnover (ATO)	Indicator of performance	Revenue/Total assets	
Growth (GROWTH)	Latent endogenous	Revenue, employees and total assets	
Revenue (REV)	Indicator of growth	Natural log of sales	
Employees (JOB)	Indicator of growth	Natural log of the number of employees	
Total Assets (ASS)	Indicator of growth	Natural log of total assets	

Source: Computed by the researcher (2022)

Sources and Method of Data Collection

This study used secondary data collected to cover a period of 10 years from 2012 to 2021. This scope was adopted because the data are recent and the financial reports are prepared under one standard, the International Financial Reporting Standards which Nigeria adopted with effect from 2012. Data for the study were gathered from

annual reports of companies, financial service firm websites, and NSE fact books.

Data Analysis and Findings

Descriptive Analysis

The sample statistics show the mean, standard deviation, minimum and maximum values of all the variables from which the observed variables were computed. These values are summarized in Table 2.

Table 2. Descriptive Statistics (values in millions of naira)

Variables	Mean	Standard deviation	Min	Max
Revenue	15,092	9,321	5,433	47,112
Fixed asset	25,799	25,600	560	88,728
Total asset	35,865	33,735	2,072	140,606
Additional plant & equip.	194	339	456	1,794
Loss	49	188	-	761
Interest on loans	627	637	-	2,579
Profit b4 int. & tax	4,595	5,949	(761)	26,879
Equity	17,790	13,047	731	48,023
No. of employees	404*	263*	44*	1,199*

*Exact values

Source: Researcher's computation (2022)

The average revenues, fixed assets and total assets of the studied firms amounted to ₦15.092 billion, ₦25.799 and ₦35.865 billion respectively. The standard deviations for revenues, fixed assets and total assets were 9,321; 25,600 and 33,735 respectively. These indicated that the variability in revenues, fixed assets and total assets were high in the studied firms. This pattern is also replicated in all other variables including yearly addition of plant and equipment, losses, interest on loans, profit, equity and number of employees. This volatility could be attributed to the economic instability in the country over the period, including galloping inflation, fluctuating exchange

rates, insecurity and communal clashes (especially in rural areas) and policy somersault. During the period 2012 to 2021 covered by this study, the country went into recession twice (2016 and 2020), which have implications on revenue, assets, profit and the number of employees of companies.

The analysis of the maximum and minimum values for the variables also suggests a huge difference in values. The minimum interest on loans, profits before interest and tax, equity and number of employees are 0, -761 million, 731 million and 44 respectively; while their maximum values are 2.579 billion, 26.879 billion, 48.023 billion and

1,199 employees respectively. Further analysis of profits and number of employees shows that the minimum profit was recorded in 2018 by Livestock Feeds PLC which also recorded the least number of employees (44 staff) in 2021. The reason for the low figures of this company compared to the remaining

two (Presco PLC and Okomu Oil Palm Company PLC) could be attributed to the heightening insecurity in the regions where livestock are reared.

The mean, minimum, maximum and standard deviation of the indicator variables are presented in Table 3.

Table 3. Indicator Variables Statistics

	Mean	Min	Max	Standard deviation
CAA	0.559	0.08	0.91	0.281
INA	8.697	3.82	12.1	1.878
LOR	0.901	0	13.54	3.371
INI	12.518	0	14.76	2.515
VAI	7.955	3.08	11.36	1.878
ROA	0.106	-0.19	0.36	0.108
ROE	0.183	-0.52	0.56	0.21
ATO	0.885	0.16	2.62	0.739
REV	16.386	15.51	17.67	0.514
JOB	5.701	3.78	7.09	0.873
ASS	16.854	14.54	18.76	1.156

Source: Researcher's computation (2022)

Partial Least Square Structural Equation Modelling (PLS-SEM) Result

The PLS-SEM results are assessed in two parts: the assessment of outer models which evaluates the relationship between the

indicators and the construct and the assessment of the inner model which evaluates the relationship between the constructs. These results are summarized in the Smartpls 4 output in Figure 3

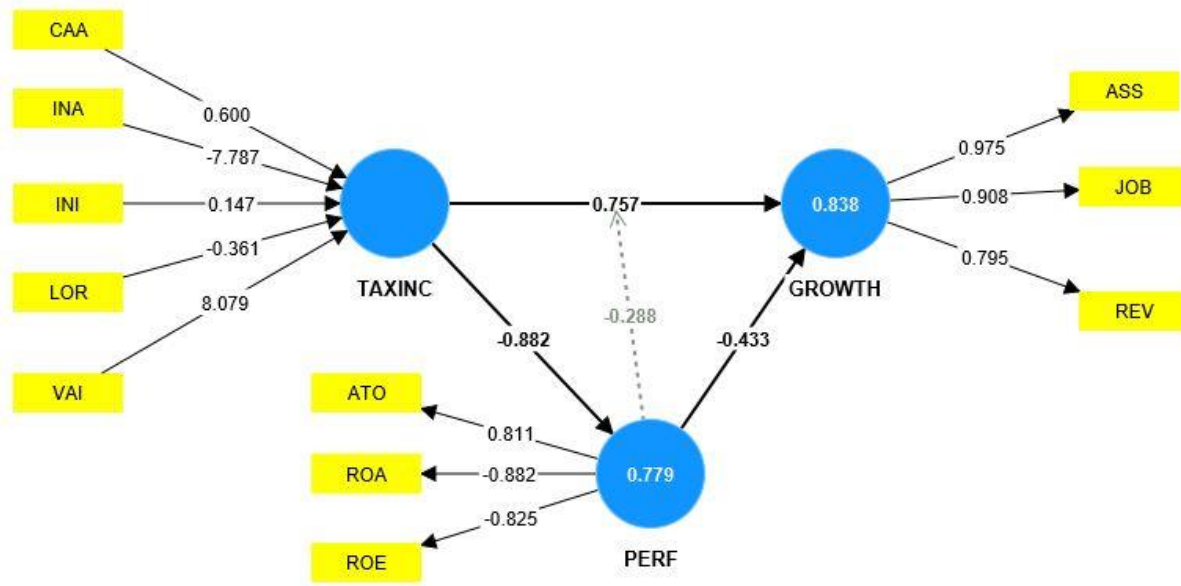


Figure 3. PLS-SEM Result

Source: Smartpls 4 output (2022)

Assessment of Outer Models

Formative constructs are assessed using the outer model weights and face validity of the

indicators. Table 4.3 shows the results of these assessments.

Table 4.3. Indicator Loading/Weight

	Loadings	Weight
CAA <- TAXINC		0.600
INA <- TAXINC		-7.787
INI <- TAXINC		0.147
LOR <- TAXINC		-0.361
VAI <- TAXINC		8.079
ATO <- PERF	0.811	
ROA <- PERF	-0.882	
ROE <- PERF	-0.825	
ASS <- GROWTH		0.975
JOB <- GROWTH		0.908
REV <- GROWTH		0.795
PERF x TAXINC -> PERF x TAXINC	1.000	

Source: Smartpls 4 Output (2022)

As observed in Table 4.3, capital allowance (CAA) has the highest weight of 0.600, VAT incentive weighed 8.079, while interest incentive (INI) weighs 0.147, the least among the indicators of tax incentives. Loss relief incentive and investment allowance have negative weights of -0.361 and -7.787 respectively. Outer model weight represents the influence of an indicator on the description of its corresponding latent variable when all other indicators' impacts are controlled (Cenfetelli & Bassellier, 2009). Although PLS-SEM method allows for removal of indicators with insignificant weight, formative indicators are assessed mainly by their face value or face validity. Any alterations to a formative construct by way of dropping indicators based on their weights or other metrics may change the definition of the latent variable.

Unlike formative construct that takes its value from the indicators, reflective indicators are construed as taking their

values from the construct, they 'reflect' the construct. Thus, face value does not count in their assessment; they are assessed for reliability and validity using indicator reliability (measured by indicator loadings), internal consistency reliability (measured by composite reliability and Cronbach's Alpha), convergent validity (measured by Average Variance Extracted) and discriminant validity (measured by Fornell Larcker Criterion).

An indicator is considered reliable if its loading is +/-0.7 and above. Loading measures the proportion of changes in the indicator that is explained by the construct. ATO, ROA, and ROE have loadings of 0.811, -0.882, and -0.825 respectively on performance; while ASS, JOB and REV have loadings of 0.975, 0.908 and 0.795 respectively on growth. Each of the indicator loads, as shown in Figure 4.1 and Table 4.3 are above the benchmark and hence, considered reliable.

Table 4.4. Composite Reliability and Convergent Validity

	Cronbach's alpha	Composite reliability (rho_a)	Average variance extracted (AVE)
GROWTH	0.877	0.923	0.803
PERF	0.047	0.86	0.7

Source: Smartpls 4 Output (2022)

The rule of thumb is that a construct with Cronbach's alpha and Composite Reliability of 0.7 and above; and AVE of 0.5 and above are considered reliable. Growth has a Cronbach's Alpha of 0.877 and Composite reliability of 0.923 as shown in Table 4.4 This indicates strong internal consistency reliability – a test of how well the indicators reflect the construct. However, Performance (PERF) recorded a Cronbach's alpha of 0.047 which is lower than the benchmark level. Nonetheless, its

Composite Reliability is high at 0.86 which indicated that the construct is reliable with a wide range that cut across low and high reliability. Cronbach's alpha and Composite Reliability represent the lower and upper band of internal consistency reliability respectively (Rajesh, 2015).

Convergent validity as measured by AVE is high for both growth and performance at 0.803 and 0.7 respectively. This indicated that the set of indicators for growth are related as well as those of performance.

In determining the discriminant validity of a construct, the square root of AVE is compared with the correlation of the construct with all other constructs in the model (either reflective or formative). The

construct is valid if the square root of AVE is greater than the correlations. This procedure is known as the Fornell Larcker Criterion.

Table 4.5. Fornell Larcker Criterion

	GROWTH	PERF	TAXINC
GROWTH	0.896		
PERF	-0.818	0.836	
TAXINC	0.859	-0.826	0.727
PERF x TAXINC	0.422	-0.700	0.610

Source: Smartpls 4 Output (2022)

The \sqrt{AVE} for growth (i.e. $\sqrt{0.803} = 0.896$), as shown in Table 4.5 is greater than the correlations of GROWTH with PERF (-0.818), GROWTH with TAXINC (0.859) and GROWTH with PERF x TAXINC (interaction term) (0.422). Similarly, \sqrt{AVE} for performance (0.836) is greater than its correlation with TAXINC and PERF x TAXINC at -0.826 and -0.700 respectively.

This assessment shows that indicators that are not related are actually not related.

Assessment of Inner Model

This evaluation consists of two main assessments: structural model path coefficient and the overall model estimation (i.e. coefficient of determination [R^2] and effect size [F^2]).

Table 4.6. Path Coefficient

	Original sample (O)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
PERF -> GROWTH	-0.433	0.557	0.987	0.324
TAXINC -> GROWTH	0.757*	0.132	4.621	0.000
TAXINC -> PERF	-0.882	0.826	1.000	0.318
PERF x TAXINC -> GROWTH	-0.288	0.277	1.020	0.308

*Significant at 1%.

Source: Smartpls 4 Output (2022)

The effect of tax incentives on growth is significant at 1% with a path coefficient of 0.757 as shown in Table 4.6, indicating that tax incentives boost growth in agricultural firms. Tax incentives' effect on performance is insignificant with a path coefficient of -0.882 which indicated that tax incentives have no significant effect on the

performance of agricultural firms. Also, the moderating effect of performance on growth (PERF x TAXINC -> GROWTH) is insignificant with a path coefficient of -0.288 indicating that performance has no significant moderating effect on the relationship between tax incentives and growth.

Table 4.7. R-square

	R-square	R-square adjusted
GROWTH	0.838	0.812
PERF	0.779	0.671

Source: Smartpls 4 Output (2022)

The R-square of growth in the model is 0.838 and adjusted R-square of 0.812 indicates over 80% predictive accuracy of the model. Performance also has an R-square of 0.779.

known as 'R² Change') is the change in R² when a causal (exogenous) variable is dropped from the model. The larger the F² value, the less the explained variance in the endogenous variable when an exogenous variable is omitted.

The second overall model estimation criterion is the F² effect size measure (also

Table 4.8. f-square

	GROWTH	PERF	TAXINC	PERF x TAXINC
GROWTH				
PERF	0.459			
TAXINC	0.694	2.145		
PERF x TAXINC	0.334			

Source: Smartpls 4 Output (2022)

Effect size value from 0.02 – 0.14 is considered a small effect size, 0.15 – 0.34 a medium effect and 0.35 and above a high effect size (Cohen, 1988). Going by these criteria, the F-square of PERF -> GROWTH, TAXINC -> GROWTH and TAXINC -> PERF are all high at 0.459, 0.694 and 2.145 respectively, while the

effect size of PERF x TAXINC -> GROWTH is moderate at 0.334.

Hypotheses Testing

The null hypotheses formulated at the beginning of the study were tested based on the significance of the path coefficient shown in Table 4.6.

Table 4.9. Hypotheses Testing

	Hypothesis	Path coefficient	P Values	Reject
H ₀₁	There is no significant impact of tax incentives on the growth of listed agricultural firms in Nigeria	0.757*	0.000	Yes
H ₀₂	There is no significant influence of tax incentives on the performance of listed agricultural firms in Nigeria.	-0.882***	0.318	No
H ₀₃	There is no significant moderating effect of performance in the relationship between tax incentives and the growth of listed agricultural firms in Nigeria.	-0.433***	0.308	No

* Significant at 1%.

*** Insignificant.

Table 4.9 shows that Ho₁ which suggests that there is no significant impact of tax incentives on the growth of listed agricultural firms in Nigeria has a path coefficient of 0.757 and P Value of 0.000 which is statistically significant at 1%. Thus this hypothesis was rejected.

However, Ho₂ and Ho₃ say ‘there is no significant influence of tax incentives on performance of listed agricultural firms in Nigeria’ and ‘there is no significant moderating effect of performance in the relationship between tax incentives and growth of listed agricultural firms in Nigeria’ respectively, have high P-values. The P value of Ho₂ (0.318) and that of Ho₃ (0.308) were not statistically significant and thus, the two hypotheses were not rejected.

Discussion of Findings

Tax incentives and growth

The empirical analysis of Ho₁ shows that the impact of tax incentives on the growth of agricultural firms in Nigeria is significant with a path coefficient of 0.757. This result is in agreement with the findings of earlier studies by Ugwu, Okwa & Inyang (2020),

Siyanbola, Adedeji, Adegbe & Rahman (2017), Mayende (2013) and Chukwumerije & John (2011). The findings of these studies corroborate various aspects of this study. For example, Ugwu, Okwa & Inyang (2020) found a significant positive effect of investment allowance on the acquisition of fixed assets. These two variables, investment allowance and assets have very high weight and loading respectively in their respective constructs as presented in Figure 4.1. Since the constructs (tax incentives and growth) they represented are found to have a positive relationship, these indicators equally do. A similar corollary can be seen in the findings of Mayende (2013) and Chukwumerije & Akinyomi (2011) which confirmed the significant influence of tax incentives on growth in terms of revenue and number of employees respectively.

The path coefficient of 0.757 is the direct effect of tax incentives on growth (TAXINC -> GROWTH), the indirect effect can be calculated as 0.382, i.e. the product of the path coefficients of TAXINC -> PERF (-0.882) and PERF -> GROWTH (-0.433) as shown in Figure 4.1 and Table 4.6. The

reasonable indirect effect of tax incentives on growth demonstrated the strong effect and robustness of the result. By implication, the tax incentives' effect on growth can extend to the national economy, since the agricultural sector contributed significantly (21.9% as at the second quarter, 2022) to Nigeria's GDP (National Bureau of Statistics, 2022). This connection to the GDP was proven by Ugwu, Nnado & Idemudia (2020), Nnubia & Obiora (2018) and Alegana (2014). However, this result contradicted those of Fawowe (2013), McDonald (2011) and Iarossi, Mousley & Radwan (2009) that suggested tax incentives have a negative effect on private investment, number of employees and investment decision respectively.

Tax incentives and performance

The analysis of Ho2 indicated that tax incentives have an insignificant effect on performance of agricultural firms in Nigeria. This could be attributed to the fact that performance depends on how well an organization utilizes the resources at its disposal. Tax incentives are available to all the companies in the sector at the same measure, but utilizing the savings to attain performance depends on the individual firm. This result is in line with that of Mauda & Saidu (2019), who also found an insignificant impact of investment allowance on the financial performance of consumer goods firms. Although McDonald (2011) found a negative effect of tax incentives on growth, he however found a positive impact of tax incentives on business performance.

Moderating effect of Performance

The third hypothesis (Ho3) which sought to determine whether the presence of performance causes any significant changes in the nature of the relationship between tax incentive and growth, was not rejected due to its insignificant P-value of 0.308,

notwithstanding its path coefficient of -0.288. That indicated that there is no significant moderating effect of performance in the relationship between tax incentives and growth of listed agricultural firms. Thus, the level of a firm's financial performance does not determine the strength and direction of the effect of tax incentives on growth.

Moderating effect is different from mediating effect where the independent (exogenous) variable cause the effect in a mediating variable and the mediating variable influence the dependent (endogenous) variable. Hence, without a mediator, there is either partial or no connection between the exogenous and endogenous variables. The mediating effect of performance in this study, also referred to as the 'indirect effect' of tax incentive on growth, as shown in the path: TAXINC -> PERT -> GROWTH, and as discussed above is calculated (to be 0.382) only served as robustness test of the direct effect of Ho1 analysis result.

Conclusion

For agricultural firms to develop, owing to the crude method of farming and other disincentives, such as energy problem, insecurity and inflation; government provide tax exemptions to encourage acquisition of equipment, ease financing, invest in infrastructure that supports agribusiness and recover losses. The objective of this study is to examine how these incentives influence the growth of these companies, and whether performance has a significant impact on the relationship.

The empirical results show that tax incentives have significant positive effect on the growth of agricultural firms. The moderating effect of performance on this relationship was found to be insignificant. The findings also revealed an insignificant

effect of tax incentives on performance. The implication of these findings is that tax incentives, especially those that are automatic and continuous lead to higher growth of agricultural firms irrespective of their level of performance. Thus, sustaining tax incentives to agribusinesses compensates for some of the disincentives that are inherent in the sector.

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