



Effect of Taxes on Net Investment of Listed Communication Firms in Nigeria

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Abstract

This study determined the effect of Taxes on Net Investment of Listed Communication Firms in Nigeria for a period of ten years spanning from 2010 and 2019. Eight Communications firms were purposively sampled from a population of eleven listed Communication firms in Nigeria. The proxies for Taxes include Information Communication Tax, Education Tax and Company Income Tax, while Net Investment served as the dependent variable. Pearson Correlation Coefficient and Panel Least Square (PLS) Regression analysis via E-Views 10.0 statistical software were used to test the hypotheses of the study. The result of this study showed that Information Communication Tax, Education Tax and Company Income Tax have a significant negative effect on Net Investment at 5% level of significance respectively. This study therefore recommends *inter alia* that Federal Government of Nigeria should reduce the amount of tax liability at the end of the year thus making funds available for further investment.

Key words

Taxation, Net Investment, Information Communication Tax, Education Tax

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1. Introduction

Over the past decades, the relationship between corporate investment and taxation has become increasingly central to economic and tax policy and therefore also a focus of empirical research. Against the backdrop of economic globalisation and the associated increase in capital mobility, corporate taxation have become one way for governments to compete with one another to attract investment and thereby create jobs. As a result of this competition, most industrialised countries have cut corporate tax rates, in some cases by a large margin. These reductions are generally financed by broadening of the tax base, with limitations in depreciation allowances and offsetting of tax losses (Amahalu *et al.*, 2019). The development of telecommunications in Nigeria began in 1886 when a cable connection was established between Lagos and the colonial office in London. By 1893, government offices in Lagos were provided with telephone service, which was later extended to Ilorin and Jebba in the hinterland. A slow but steady process of development in the years that followed led to the gradual formation of the nucleus of a national telecommunications network. In 1923, the first commercial trunk telephone service between Itu and Calabar was established. Between 1946 and 1952, a three-channel line carrier system was commissioned between Lagos and Ibadan and was later extended to Oshogbo, Kaduna, Kano, Benin, and Enugu; thus

connecting the colonial office in London with Lagos and the commercial centers in the country with local authority offices. The main transmission medium during the pre-independence era was unshielded twisted pair. This evolved later from rural carrier systems on high gauge lines to line carrier systems of twelve-channel capacity. Small- to medium-capacity systems employing VHF and UHF radio were introduced around 1955. By about 1960, a manual telex exchange of sixty subscriber lines was in service in Lagos. While all the above efforts were essentially aimed at improving internal telephone services in Nigeria, external telephone services in the pre-independence period were wholly owned by Cable and Wireless of the United Kingdom, which was a colonial private company. Cell phones have become a lot smaller over the years, but they're bigger than ever in functionality and popularity (Akele, 2018). However, investment decisions of companies are mostly fiscal weapon. Taxation (such as information communication tax, education tax, company income tax, personal income tax, petroleum profit tax, custom duties, export duties, excise duties, value added tax etc) is regarded as an indispensable measure towards any nation's development among the various sources of achieving economic goal of any nation precisely developing country like Nigeria. The question then is what is the concern of tax in investment decision of companies? It is well understood that taxation can distort investment plans by reducing the after-tax returns to new investment.

Nigeria is a nation with federal political structure that adheres strictly to the same principles of fiscal regime and this system has serious implications on how the tax system is managed. It is characterized by unnecessary complex, distortion and largely inequitable taxation laws that have limited application in the formal sector that dominates the economy. Tax is an essential source of government revenue that defrays the expenditures incurred by government by making it mandatory on tax payers (Okeke *et al.*, 2018). Tax is a valuable instrument of public finance whose magnitude affects the level of economic activity of an economy and is utilized not only for raising revenue of government to finance its programmes but also regulates the direction of economic performance of the economy. A system of tax vary from one country to the other and because it is a socio/political and economic model representing society's social, political and economic needs and aspiration at any given time, the Nigerian tax system is dynamic and is continually changing to meet the needs of the constituents of the society (Aminu & Eluwa, 2018). Tax is a system of raising money from individual person or corporate body for the purposes of government developmental programmes. It is rather a compulsory contribution imposed by the government on tax payers in return to identifiable benefit of living in a relatively educated, healthy and safe society. Though tax are imposed to regulate the production of certain goods and services, protection of infant or certain key industries as well as means of curbing inflation and meeting up the operational costs of governance. Taxes in Nigeria are imposed to regulate certain economic activities such as to influence economic activities in the country, bridge the inequality gap between the rich and the poor, to curtail consumption of undesirable goods and services, to correct a country's balance of payment and tax is used to attract investors. Consequently there are no companies that do not make investment decision at one time or the other which requires taxation (such as information communication tax, education tax company income tax etc) to be properly and effectively planned to achieve the companies' goals and objectives. It is based on these facts that this research sought to ascertain the effect of taxes on net investment of listed communication firms in Nigeria.

1.1. Statement of the Problem

The interaction between investment and financing decisions is arguably the central issue in corporate world. It is now well established that a firm's financing choices may affect its investment decisions because taxes, issuance costs, agency conflicts, and information problems associated with debt and equity will affect the firm's cost of capital, drive a wedge between the cost of internal and external funds, and alter managers' incentives to take different types of projects. An issue that has received particular attention is the sensitivity of investment to internally generated cash flow. Theoretically, a firm might invest more when cash flow is high for three reasons: (i) internal funds may be less costly than external funds, (ii) managers may overspend internally available funds, and (iii) cash flow may simply be correlated with investment opportunities. Taxes (such as information communication tax, education tax and company income tax) can affect investment decisions of a company because it is the amount taken from the profit of the company. This could be invested back to business to generate more profits to the company thus

increasing the shareholders' value. Company business activities are surrounded by risks and uncertainties and such risk could lead to losses of money invested, losses of material in site and the causes of all these things could be having not made good decisions on how to invest.

The linkage between tax and net investment has received persistent attention in both the academic literature and policy debates. One of the main drivers of economic growth is investment and how taxes affect investment behavior of firms is, indeed, a question of great importance. It is well understood that company taxation can have large effects on firms' investment decisions. Taxes (such as information communication tax, education tax and company income tax) impinge directly on the incentive to accumulate capital and to perform research. To tackle this issue, starting from the mid-80s many organization for economic cooperation and development (OECD) countries have undertaken significant reforms of their business tax system under the general objective of reducing the distortionary effects of taxes on investment, in way to foster firms' competitiveness and attract foreign investments (Okeke *et al.*, 2018). There are contrasting views on whether taxes affect corporate investment. Traditional models of dividend taxation assume that the cost of capital of firms, and thus corporate investment, depends on the level of taxation (Chen & Chen, 2012; Fama & French, 2015). In contrast, the new view of dividend taxation assumes that investments are funded by retained earnings rather than new equity (Estevão & Samake, 2017; Rauh, 2017).

The relationship between tax and net investment has produced mixed, inconsistent results, providing no conclusive evidence whether the relationship is positive (Fazzari *et al.*, 2016; Oliveira & Fortunato, 2016), negative (Bond *et al.*, 2014; Chirinko, 2015), or neutral (Jorgenson, 2013), thereby constituting variable gap and sectoral gap. In order to fill the observed gaps in literature, this study considered tax (proxied by information communication tax, education tax and company income tax) as against prior studies that considered only company tax) in order to close the variable gap, while the sectoral gap was resolved by concentrating on Communication Sector as majority of the study on this theme focused on deposit money banks (to the best knowledge of the researcher). Hence, the need to ascertain the effect of tax on net investment of listed communication firms in Nigeria from 2010-2019.

1.2. Objectives of the Study

The main objective for this study is to determine the effect of Taxes on Net Investment of listed Communication firms in Nigeria.

The specific objectives are to:

- i. Ascertain the effect of Information Communication Tax on Net Investment of Communication firms listed on Nigeria Stock Exchange.
- ii. Determine the effect of Education Tax on Net Investment of Communication firms listed on Nigeria Stock Exchange.
- iii. Assess the effect of Company Income Tax on Net Investment of Communication firms listed on Nigeria Stock Exchange.

1.3. Research Hypotheses

To answer the research questions, three null hypotheses were formulated:

Ho₁: Information Communication Tax has no significant effect on Net Investment of Communication firms listed on Nigeria Stock Exchange.

Ho₂: Education Tax has no significant effect on Net Investment of Communication firms listed on Nigeria Stock Exchange.

Ho₃: Company Income Tax has no significant effect on Net Investment of Communication firms listed on Nigeria Stock Exchange.

2. Literature review

2.1. Conceptual review

2.1.1. Tax

Tax is a compulsory charge imposed by a public authority on the income and properties of individuals and companies as stipulated by the government Decree, Acts or Laws irrespective of the exact amount of service of the payer in return (Abiahu & Amahalu, 2017). Tax payment is not for the direct exchange of good and/or services but a transfer of resources and income from the private sector to the public sector in order to achieve some of the nation's economic and social goals. Such goals may be in for of high level of employment, stable prices, rapid growth of gross national product, favourable balance of payments position, promotion of a free market economy, satisfaction of collective demands, equitable income redistribution, promotion of infant industries, the encouragement of priority sector, encouragement of balance population development and promotion of labour and capital development.

2.1.2. Information Communication Tax

Information technology tax is tax imposed on companies engaging in information communication technology. However not all companies in Nigeria are subject to information technology tax. Section 12(2) of the NITDA Act provides that certain companies are under obligation to pay information technology tax and such companies include: Telecommunications companies, finance institution, insurance companies, pension managers, internet service providers and cyber companies. These companies are expected to pay the tax at the taxable rate of 1% of their gross profit. Unlike companies income tax where the tax is charged based on the net income or profit (that is income after deduction of expense or exempted income or deductible income from the gross or aggregate income), information technology tax is taxable on the gross profit of a company before any deduction is made. Some has argued that this tax is an additional burden on companies considering the 30% of companies' income tax already liable for such could lead to multiple tax from the same tax base or income. Some also argued that it could lead to tax evasion and create unnecessary complexity in the administration of tax. It is important to note that it is not all companies listed above have the liability to pay. To be liable under the Act, such companies must earn at least an annual profit of 1 million Naira. This caveat tend to protect such companies which originally would have fallen under the Act but make little profit on an annual basis. This caveat can also be used as an escape route by companies to escape tax liability by hidden some profit made by it. The information technology tax is administered by the Federal Inland Revenue Services (FIRS). Once the tax is collected, it is put into a trust fund account called the Information technology Development Agency trust fund. This money is exempted from income tax (Atuma, 2018).

2.1.3. Education Tax

The Education Tax Act was promulgated as Education Tax Decree no 7 of 1993. It was amended through the decree no 40 of 1998 to mainly provide for appointment of committee members by the Board of Trustees. It imposed a tax at the rate of 2% on Profit before Tax earned by all companies registered in Nigeria including those operating in the petroleum sector of the economy. That is, the income chargeable to this tax is the assessable profit of any company registered in Nigeria. An education tax of 2% of assessable profits is imposed on all companies incorporated in Nigeria. This tax is viewed as a social obligation placed on all companies in ensuring that they contribute their own quota in developing educational facilities in the country.

2.1.4. Company Income Tax

Company Tax is established by the Companies Income Tax Act (CITA) CAP C21 2004 LFN for both resident and non-resident companies in Nigeria. A resident company is one whose operations are carried and managed and is liable to Nigerian tax law. On the other hand, a non-resident company is one whose portion of its income is obtainable in Nigeria and is liable to any such laws in force in any given country outside Nigeria. Company tax is controlled and managed by the Federal Inland Revenue Service (FIRS) through various large tax offices and incorporated tax offices. Companies are taxed on the basis on certain

expenditure in determining whether they are incurred wholly, exclusively, necessarily or reasonably in earning the income. All companies in Nigeria are liable to pay companies Income Tax on their global profits accruing in, brought into, derived from or received in Nigeria. The CITA however, exempts the profits of any company engaged in ecclesiastical, charitable or educational activities of a public character in so far as such profits are not derived from a trade or business carried on by such company. CITA also exempts the profits from taxation of any company formed for the purpose of promoting sporting activities where such profits are wholly expendable for such purpose. The tax rate applied to small companies is 20% on the taxable profit instead of the 30% of a normal trade or business.

2.1.5. Net Investment

Net investment is the amount spent by a company or an economy on capital assets, or gross investment, less depreciation. Net investment helps give a sense of how much money a company is spending on capital items used for operations, such as property, plants, equipment and software. Subtracting depreciation from this amount, or capital expenditure (CAPEX) (since capital assets lose value over their life because of wear and tear, obsolescence, etc.), provides a more accurate picture of the investment's actual value. Net cash flow refers to the difference between a company's cash inflows and outflows in a given period. In the strictest sense, net cash flow refers to the change in a company's cash balance as detailed on its cash flow statement (Vaidya, 2018).

2.1.6. Information Communication Tax and Net Investment

Information Technology (IT) is the automation of processes, controls, and information production using computers, telecommunications, software and ancillary equipment such as automated teller machine and debit cards. Communication technology deals with the physical devices and software that link various computer hardware components and transfer data from one physical location to another (Lin, 2017). A structured approach in the development of tax policy can generate positive effects on tax certainty along several channels, for instance by engaging key participants of the private sector in the consultation, pre- and post-reform/change, and by having safeguards to guarantee a good drafting of tax law and ultimately the clarity of tax legislation. Zwick and Mahon (2017) found a negative relationship between tax and cash flow of US firms, while Garrison (2018) found a positive relationship between tax and risky investments.

2.1.7. Education Tax and Net Investment

The primary responsibility of every government all over the world is to ensure security, freedom and welfare of its citizen. For instance, Section 16(1b) of the 2011 Constitution of the Federal Republic of Nigeria states that "the government has the responsibility of ensuring the maximum welfare, freedom and happiness of its citizens" (Federal Government of Nigeria, 2011). To effectively carry out its primary function and other subsidiary functions, governments need adequate funding. Unfortunately, Government responsibilities continue to increase over time especially in developing country like Nigeria; as a result of growing population of citizens, and technological development. Agbionu *et al.* (2017) concluded that an increase in average education expenditure can increase long-run growth particularly in the rich countries. Brunela (2018) compared the impact of investment in health with investment in education and showed that the impact of investment in health has a stronger impact on economic growth than investment in education. Investment in education is a key driver of future development. There is empirical evidence that education expenditure is positively associated with future economic growth (Federici & Parisi, 2015).

2.1.8. Company Income Tax and Net Investment

Statement of Financial Accounting Standards (SFAS) 95's definition of investing activities includes making and collecting loans; acquiring and disposing of debt or equity instruments; and acquiring and disposing of property, plant, equipment, and other productive assets. More specifically, investing cash inflows include receipts from collecting or disposing of loans; receipts from the sale of debt or equity securities of other entities; and receipts from sales of property, plant, equipment, and other productive assets, including business dispositions. Similarly, investing cash outflows include payments to make or acquire loans; payments to acquire debt or equity securities of other entities; and payments to acquire

property, plant, equipment, and other productive assets, including capitalized interest payments and business acquisitions. Taxation is a tool by government in fashioning various aspects of economic growth.

Lewellen and Lewellen (2016) used a sample of firm-level data for OECD countries to investigate whether firms facing higher corporate tax rates on their profits exhibit lower total factor productivity (TFP) and investment levels compared to firms facing lower corporate tax rates.

2.2. Theoretical framework

2.2.1. Free Cash Flow Theory (FCF)

Free Cash Flow theory was propounded by Jensen in 1976. Free cash flow (FCF) represents the cash that a company is able to generate after required investment to maintain or expand its asset base. It is a measurement of a company's financial performance and health. Free cash flow (FCF) is the cash flows available to all investors in a company, including common stockholders. FCF provides a useful valuation technique that can derive the value of a firm or the value of a firm's common equity. FCF measures the level of cash available to a company's investors net of all required investments in working capital and fixed capital, or capital expenditures (CAPEX), for a period. FCF or FCFF is an important measure because it allows a company to pursue opportunities that enhance shareholder value (Amahalu & Ezechukwu, 2017). Excess cash can expand production, develop new products, make acquisitions, pay dividends and reduce debt. As free cash flow increases, balance sheet strength rises. However, it is important to note that negative free cash flow is not a bad indicator in itself. If free cash flow is negative, it could be a sign that a company is making significant investments. If these investments earn a high return, the strategy has the potential to add value in the long run.

2.3. Empirical review

Zwick & Mahon (2017) estimated the effect of temporary tax incentives on equipment investment using shifts in accelerated depreciation. Analyzing data for over 120,000 firms, the study presented three findings. First, bonus depreciation raised investment in eligible capital relative to ineligible capital by 10.4 percent between 2001 and 2004 and 16.9 percent between 2008 and 2010. Second, small firms responded 95 percent more than big firms. Third, firms responded strongly when the policy generates immediate cash flows, but not when cash flows only come in the future. This heterogeneity materially affects investment-weighted estimates and supports models in which financial frictions or fixed costs amplify investment responses.

Amuka & Ezeudeka (2017) investigated whether the incentive policy has brought any significant change in the pattern of flow of foreign direct investment to the non-oil sector (1999-2016) in Nigeria. The study adopted a multiple regression model which was transformed into log-log model in the analysis. Regime switch model helped us to evaluate the effectiveness of the policy introduced in late 1999. Both company income tax and investment allowance appeared with the right sign. Result suggested that the tax incentive policy introduced changed the flow of foreign investment to the non-oil sector, showing that the country's tax incentives can help revive the ailing non-oil sector.

Amahalu & Ezechukwu (2017) assessed the extent at which cash holding affects financial performance of quoted insurance firms in Nigeria over the period 2010-2015. Three hypotheses were formulated in line with objective of the study; Ex-post facto research design and time-series data were adopted and the data for the study were obtained from fact books, annual reports and account of the quoted insurance companies under study. Pearson coefficient of correlation and multiple regressions were applied for the test of the three hypotheses formulated with aid of STATA 13 statistical software. Findings showed that cash holding (proxy by cash to total book value of assets and cash) has a positive and statistical significant effect on financial performance (proxy by Return on Asset, Return on Equity and Tobin's Q) at 5% significant level. Based on these findings, the study recommends among others that insurance companies should adequately manage how they re-invest their resource so as to prevent any form of mismanagement of resource that can guarantee their existence in business.

Brunela (2018) examined the effect of tax on the economic growth in the case of a small and open developing country as Albania. The main objective of this study is to empirically investigate the impact of fiscal policy on the level of economic growth in Albania. The study covered the period between 1994 and

2016. The co integration technique with its implied Error Correction Model was used for the study. Three indicators of fiscal policy are used: profit tax, government expenditure and external debt. The result indicates that these three indicators have a positive impact on the economic growth in Albania. The study came to the result that the good use of the fiscal policy will improve the growth of economy in Albania.

3. Methodology of research

3.1. Research Design

The research design employed in this study is the *ex-post facto* research design.

3.2. Population of the Study

The population of this study consists of all the eleven (11) Communication companies trading on the floor of Nigeria Stock Exchange as at 31st December, 2019. They include; Chams Plc, Courtville Business Solutions Plc, CWG Plc, E-Tranzact International Plc, Mass Telecommunication Innovations Plc, MTECH Communications Plc, NCR (Nigeria) Plc, Omatek Ventures Plc, Tripple Gee and Company Plc, Starcomms Plc, IHS Plc.

3.3. Sample Size and Sampling Technique

Eight (8) Communications companies were purposively selected as the sample size of this study with the utilization of Purposive sampling method Data were gathered from the published financial statements of the eight (8) Communication companies for a ten (10) year period spanning from 2010-2019. They include: Chams Plc, Courtville Business Solutions Plc, E-Tranzact International Plc, Mass Telecommunication Innovations Plc, MTECH Communications Plc, NCR (Nigeria) Plc, Omatek Ventures Plc, Tripple Gee and Company Plc.

3.4. Source of Data

This study made use of secondary data precisely. The data sets were sourced from publications of the Nigerian stock exchange (NSE), fact books and the annual report and accounts of the selected quoted Communication companies.

3.5. Operationalisation of Variables

Variables (code)	Operational Definitions
Dependent Variable (Net Investment)	
Net Investment (NETIV)	Capital Expenditures – Depreciation
Independent Variable (Taxes)	
Proxies:	
Information Communication Tax (ICT)	1% of Gross Profit
Education Tax (ET)	2% of Profit before Tax
Company Income Tax (NETIV)	30% of the taxable profit
Control Variable	
Firm Size (FSZ)	Natural logarithm of total asset
Leverage (LEV)	Total debt/Total equity

3.6. Model Specification

The following research models were formulated in line with the research hypotheses in order to empirically determine the effect tax on net investment:

$$NETIV_{it} = \beta_0 + \beta_1 ICT_{it} + \beta_2 FSZ_{it} + \beta_3 LEV_{it} + \mu_{it} \quad - \quad - \quad - \quad \text{Model 1}$$

$$NETIV_{it} = \beta_0 + \beta_1 ET_{it} + \beta_2 FSZ_{it} + \beta_3 LEV_{it} + \mu_{it} \quad - \quad - \quad - \quad \text{Model 2}$$

$$NETIV_{it} = \beta_0 + \beta_1 CIT_{it} + \beta_2 FSZ_{it} + \beta_3 LEV_{it} + \mu_{it} \quad - \quad - \quad - \quad \text{Model 3}$$

Where:

$NETIV_{it}$ = Net Investment of firm i in period t ; ICT_{it} = Information Communication Tax of firm i in period t ; ET_{it} = Education Tax of firm i in period t ; CIT_{it} = Company Income Tax of firm i in period t ; FSZ_{it} = Firm Size of firm i in period t ; LEV_{it} = Leverage of firm i in period t ; $\mu_{i,t}$ = component of unobserved error term of firm i in period t ; β_0 = constant term; β_1 , β_2 and β_3 = are slope to be estimated of firm i in period t ; i = firm identifier (8 firms); t = time variable (2010, 2011, ... 2019) – (Ten Years).

3.7. Data Presentation and Analysis

Table 1. Pearson Correlation Matrix

	NETIV	ICT	ET	CIT	FSZ	LEV
NETIV	1.000	0.608	0.027	-0.683	0.623	0.205
ICT	0.608	1.000	0.653	-0.021	0.312	-0.091
ET	0.027	0.653	1.000	0.606	-0.185	-0.230
CIT	-0.683	-0.021	0.606	1.000	-0.658	-0.406
FSZ	0.623	0.312	-0.185	-0.658	1.000	0.275
LEV	0.205	-0.091	-0.230	-0.406	0.275	1.000

Source: E-Views 9.0 correlation output, 2020

3.8. Interpretation of Pearson Correlation Matrix

From the findings on the correlation analysis in table 1, the study found that there was positive correlation coefficient between ICT, ET, FSZ, LEV and NETIV by correlation factors of 0.608, 0.027, 0.623 and 0.205 respectively. However, CIT and NETIV were found to have negative correlation with correlation coefficients of -0.683.

3.9. Test of Hypotheses

Test of Hypothesis I

Ho₁: Information Communication Tax has no significant effect on Net Investment of Communication firms listed on Nigeria Stock Exchange.

H₁: Information Communication Tax has significant effect on Net Investment of Communication firms listed on Nigeria Stock Exchange.

Table 2. Panel Least Square Regression Analysis between ICT and Net Investment of listed Communication firms in Nigeria

Dependent Variable: NETIV
 Method: Panel Least Squares
 Date: 06/19/20 Time: 05:25
 Sample: 2010 2019
 Periods included: 10
 Cross-sections included: 8
 Total panel (balanced) observations: 80

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.869281	0.969574	-2.959322	0.0041
ICT	-6.692258	1.015147	-6.592403	0.0000
FSZ	1.075491	0.085017	12.65028	0.0000
LEV	0.020114	0.020163	0.997565	0.3217
R-squared	0.705790	Mean dependent var		9.766678
Adjusted R-squared	0.694176	S.D. dependent var		0.785071
S.E. of regression	0.434155	Akaike info criterion		1.217874
Sum squared resid	14.32525	Schwarz criterion		1.336976
Log likelihood	-44.71498	Hannan-Quinn criter.		1.265626
F-statistic	60.77289	Durbin-Watson stat		1.905721
Prob(F-statistic)	0.000000			

Source: E-Views 10.0 Regression Output 2020

3.10. Interpretation of Regression Result

In table 2, a panel least square regression analysis was conducted to test the effect of information communication tax on net investment. Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the table 2, the value of adjusted R squared was 0.694, an indication that there was variation of 69.4% on net investment due to changes in ICT, FSZ and LEV. This implies that only 69.4% changes in net investment of communication firms could be accounted for by ICT, FSZ and LEV, while 30.6% was explained by unknown variables that were not included in the model. The probability of the slope coefficients indicate that; $P(x_1=0.0000 < 0.05; x_2=0.0000 < 0.05; x_3=0.3217 > 0.05)$. The co-efficient value of $\beta_1 = -6.692258$ for ICT implies that NETIV is negatively related to ICT, though statistically significant at 5%.

The linear regression model becomes;

$$NETIV = -2.869281 - 6.692258ICT + \mu$$

The implication is that, for there to be a unit/one naira increase in NETIV there will be 6.6922581 multiplying effect decrease of ICT. The Durbin-Watson Statistic of 1.905721 suggests that the model does not contain serial correlation. The F-statistic of the NETIV regression is equal to 60.77289 and the associated F-statistic probability is equal to 0.000000, so the null hypothesis was rejected and the alternative hypothesis was accepted.

Decision

Since the Prob(F-statistic) of 0.000000 is less than the critical value of 5% (0.05), then, it would be upheld that information communication tax has significant negative effect on net investment of communication firms listed on Nigeria Stock Exchange at 5% level of significance, thus, H_1 is preferred over H_0 .

Test of Hypothesis II

H₀₂: Education Tax has no significant effect on Net Investment of Communication firms listed on Nigeria Stock Exchange.

H₂: Education Tax has significant effect on Net Investment of Communication firms listed on Nigeria Stock Exchange.

Table 3. Panel Least Square Regression Analysis between ET and Net Investment of listed Communication firms in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.278598	1.124739	-1.136795	0.2592
ET	-1.261297	0.508423	-2.480804	0.0153
FSZ	0.949472	0.099238	9.567606	0.0000
LEV	0.021777	0.024897	0.874671	0.3845
R-squared	0.572192	Mean dependent var		9.766678
Adjusted R-squared	0.555305	S.D. dependent var		0.785071
S.E. of regression	0.523528	Akaike info criterion		1.592254
Sum squared resid	20.83019	Schwarz criterion		1.711355
Log likelihood	-59.69016	Hannan-Quinn criter.		1.640005
F-statistic	33.88329	Durbin-Watson stat		1.651948
Prob(F-statistic)	0.000000			

Source: E-Views 10.0 Regression Output 2020

3.11. Interpretation of Regression Analysis

This study adopts panel data which has the advantage of combining both time-series and cross sectional dimensions of the eight listed communication companies for this research. The value of Adjusted R-squared showed that 55.5% of the total variation in dependent variable is explained by independent variable to the determination of net investment while the remaining 44.5% is caused by other explanatory factors outside this model and this is captured by the error term. The coefficient result shows that ET ($\beta_1 = -1.261297$) is negatively related with NETIV, while FSZ ($\beta_2 = 0.949472$) and LEV ($\beta_3 = 0.021777$) are positively related with NETIV. The probability value of the slope coefficients indicate that $P(x_1 = 0.0153 < 0.05$; $x_2 = 0.0000 < 0.05$; $x_3 = 0.3845 > 0.05$). This implies that NETIV has a significant negative relationship with ET; a significant positive relationship with FSZ and non-significant positive relationship with LEV.

The Durbin-Watson figure of 1.651948 indicates the absence of autocorrelation in the regression model. The overall performance of the model is satisfactory as shown by Prob(F-statistics) = 0.000000.

From the above factual information it is clearly obvious that there is a significant negative relationship between ET and NETIV.

The regression equation is:

$$\text{NETIV} = -1.278598 - 1.261297\text{ET} + \mu$$

The implication is that, for there to be a unit/one naira increase in NETIV there will be 1.261297 multiplying effect decrease of ET

Decision

Since the result of the Prob(F-statistic) of 0.000000 is less than the critical value of 5% significance level, leading to the conclusion that education tax has a significant negative effect on net investment of listed communication firms at 5% significant level, hence, H_1 is accepted.

Test of Hypothesis III

H₀₃: Company Income Tax has no significant effect on Net Investment of Communication firms listed on Nigeria Stock Exchange.

H₃: Company Income Tax has significant effect on Net Investment of Communication firms listed on Nigeria Stock Exchange.

Table 4. Panel Least Square Regression Analysis between CIT and Net Investment of listed Communication firms in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.464493	1.181232	-1.239800	0.2189
CIT	-1.062804	0.532894	-5.994402	0.0000
FSZ	0.960791	0.102538	9.370143	0.0000
LEV	0.017764	0.025086	0.708125	0.4810
R-squared	0.560549	Mean dependent var	9.766678	
Adjusted R-squared	0.543202	S.D. dependent var	0.785071	
S.E. of regression	0.530605	Akaike info criterion	1.619107	
Sum squared resid	21.39713	Schwarz criterion	1.738208	
Log likelihood	-60.76429	Hannan-Quinn criter.	1.666858	
F-statistic	32.31429	Durbin-Watson stat	1.635451	
Prob(F-statistic)	0.000000			

Source: E-Views 10.0 Regression output, 2020

3.12. Interpretation of Regression Result

$$\text{NETIV} = -1.464493 - 1.062804\text{CIT} + \mu$$

The above model tested the effect of company income tax on net investment. The result showed that company income tax has a significant negative effect on net investment. This can be seen from the coefficients and probability of t-stat in table 4; $\beta_1 = -1.062804$, Prob = 0.0000. The probability of t-statistics for company income tax is lower than the acceptable 5%. Furthermore, the Adjusted R-squared which is the coefficient of determination shows the magnitude of variations caused on net investment by the explanatory variables (CIT, FSZ and LEV) to be 0.543. This indicates that about 54.3% variation in net investment is attributed to the influence of the explanatory variables (CIT, FSZ and LEV) while the remaining 45.7% is caused by other explanatory factors outside this model and this is captured by the error term. Thus, the result indicates that company income tax has a strong negative relationship with net investment, since the adjusted R^2 is above 50% at about 54.3%, the stated independent variable in the model is good enough to explain net investment. The significance level is 0.0000; this in essence shows that there is a significant relationship between the variables.

Decision

From Table 4, at the adopted level of significance at 0.05, the overall significance of the model with the Prob(F-statistic) = 0.000000, which is less than 0.05. Therefore, we reject the null hypothesis and accept the alternative, which upholds that company income tax has significant effect on net investment of communication firms listed on Nigeria Stock Exchange at 5% significant level.

4. Findings, conclusions and recommendations

4.1. Summary of findings

Based on the analysis of data, the following findings emerged:

- i. Information communication tax has a significant negative effect on net investment of communication firms listed on Nigeria Stock Exchange at 5% level of significance.
- ii. Education tax has a significant negative effect on net investment of listed communication firms at 5% significant level.
- iii. Company income tax has a significant negative effect on net investment of communication firms listed on Nigeria Stock Exchange at 5% significant level.

4.2. Conclusions

This study examined the effect of taxes on net investment of communication firms listed on the floor of the Nigerian Stock Exchange from 2010-2019 periods. Existing literature showed that researchers are yet to reach a consensus about the effect of taxes on net investment. This study has contributed to the research effort at empirical measure of the effect of taxes on net investment of listed communication firms. Panel data were sourced from the annual reports and accounts of the sampled firms. Inferential statistics using correlation analysis and panel least square regression were employed via E-Views 10.0 statistical software. Data analysis revealed that a relationship exists between taxes and net investment of communication firms. As disaggregated components, information communication tax, education tax and company income tax exerted a significant negative effect on net investment at 5% significant level.

4.3. Recommendations

The following recommendations were made in line with the findings and conclusion of this study:

- i. In order to reverse the negative effect of information communication tax, communication firms should take advantage of depreciation tax shield as the depreciation amount calculated each year is used to reduce the amount of tax liability at the end of the year thus making funds available for further investment.
- ii. Based on the inverse relationship that exist between education tax and net investment, this study recommends that communication companies should employ the services of tax experts to aid them in tax planning in order to reduce the net tax payment so as to increase their net investment. Again they should increase their asset size and ensure efficient use of those assets to reflect in the production turnover of the companies.

iii. Since the findings of this study indicate that company income tax has a significant negative effect on net investment, Chief Executive Officers need to respond to each side accordingly to enable them achieve the objectives of the company and those of the shareholders. Very high corporate taxes in the country affect the net investment of the organization and the economy at large in the sense that companies do not have enough retained earnings to undertake effective projects that will lead to the growth of company and economic development.

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