Volume 6, Nomor 2, September 2024, pp 75-92. Copyright © 2019 JAFTA, Program Studi Magister Akuntansi, Fakultas Hukum dan Bisnis Digital, Universitas Kristen Maranatha. ISSN: 2654-4636 | E-ISSN: 2656-758X https://journal.maranatha.edu/index.php/jafta

TAXATION REVENUE AND GOVERNMENT INVESTMENT IN ELECTRICITY: AN ANALYSIS OF INDISPENSABLE INTERCONNECTION WITH VECM

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ABSTRACT

This study appraised the effect of taxation on government investment in electricity in Nigeria. Data on electricity and taxation were realized through the ministry of works, power and housing as well as the CBN statistical Bulletins respectively from 1981 to 2022. The necessary data collected were experimentally analyzed with regression, VECM, and Cointegration analysis. Unit root test was also incorporated in this study for effective affirmation of stationary among the variables. Findings dispensed that taxation has positive effect on investment in electricity due to the fact that a percent upward movement of taxation significantly upsurge investment in electricity. Revenue from oil has positively affected investment in electricity insignificantly. Public debt has been notified having a negative significant effect on investment in electricity. Finally, government expenditure has been discovered having negative effect on investment in electricity in Nigeria. Conclusively, taxation has positive significant effect on the investment in electricity in Nigeria. The potency of electricity in improving economic status and enhancing people standard of living in Nigeria is indispensable which cannot be underestimated. It is therefore recommended that more devices should be made available to automatically allocate certain percentage from tax revenue for effective utilization on electricity investment in the country.

Key Words: Electricity; Taxation; Oil revenue; government Expenditure; Public Debt

INTRODUCTION

The significance of electricity in improving economy and standard of living in the country cannot be underestimated. All the sectors in the country depends on electricity in order to be efficient, effective and productive. Every government invested in electricity so as to draw both the indigenous and foreign investment in to the country, and to provide essential service with the income realized from the industries. Presently, among various other things in Nigeria, inadequate and irregular electricity services provision has been major hindrance for the growth of the country. This condition has mandated many industrious people, enterprises, and industries to depend on alternative power energy to power their business such as generator, solar energy in order to fulfill the request of the customers. This equally has ejected many industrious individual and organisation out of the country because of the persistent power failure which has ignited lost and debts to the organization. But the residual organizations or businesses produce goods and services with unavoidable high overhead cost which invariably lead to increment in the price of goods and services

because of major dependence on self-generation like diesel-powered generators for the business survival. Lack of electricity has been a major obstacle to investment both private and government investment. In the same vein, most of the rural areas in the country have also been yarning for electricity for the business survival. All the business in rural areas have being moving to the urban areas because of lack of access to electricity which has dispensed over congestion in the cities.

To quench electricity thirsts, government established Electric Power Sector Reform Act, 2005 (the 2005 Reform Act) which swerved the electricity custodian to Power Holding Company of Nigeria (PHCN) from National Electric Power Authority (NEPA). But the procurement of major electricity capital expenditure is still vested on government. That is the government retained ownership of Transmission Company of Nigeria. Recently, Nigeria government has installed and mounted electricity generation capacity which supplies national grid 12,522MW with the available capacity and capability of 4,500 MW4 in order to actualize the electric demand of over 170 million Nigeria population. Many electricity transformers has been procured by the government for the installation and rural electrification in order to avert epileptic electricity in the country. To fulfill the righteousness in electricity in Nigeria, government needs persistent revenues to actualize persistent electricity expenditure for persistent supply of electricity and electrification in the country. This can either be sourced externally or internally through oil revenue and taxation. Investments in the electricity sector are essential for ensuring reliable and sustainable energy supply, driving economic growth, and promoting social development. However, the allocation of government funds to the electricity sector can be influenced by various factors, including revenue from oil exports. Boma & Daso, (2021) opined that Nigeria, as a prominent oil-producing nation, has long relied on oil revenue as a significant source of income for the government. This reliance on oil revenues has had profound implications for various sectors, including the electricity sector. Oil revenue is often a significant source of income for resource-rich countries, and it can impact the government's ability to fund key sectors like electricity (Orbunde et al., 2022).

According to Adegbite & Usman, (2017), government collect taxes to cater for well-being of the populaces, to procure unaffordable equipment, and provides essential or indispensable services for the people. Government therefore realized income from taxes of goods, services, individual income, organization income, and gains on disposal of properties in order to actualize procurement of capital expenditure in which investment in electricity and electrification are incorporated. Also, through suitab**le** taxation, and supportive regulatory policies, Nigeria government attains specific macroeconomic objectives such as full employment, price stability, economic growth, and expenditure actualization (Ntekpere & Olayinka, 2020). The problem of Nigeria on electricity has not just felt by the Nigerians, but it has been in existence since two decade on electricity generation, distribution and transmission. Government has been planning or devising every means to eradicate the generators' importation.

Nigeria power Sector has been pugnacious to make available electricity in surplus to Nigerian population, but because of the problem facing in terms of the capital resources, inadequate generating capacity, high prices, and unreliable supplies they are

unable to generate electricity, transmit the electricity and distribute it to the essential standard. Nigeria's electricity supply is notably unreliable despite the huge amount voted for the sector annually by the government. The indicators of the present crisis are the indications of unfathomable problems that are facing in Nigeria which are caused by epileptic electric supply. Nigeria realized income extensively from taxation which has been allocated to all the sectors of economy including power sector. To this effect, it is expected that the electricity in Nigeria is reliable, strong, and efficient but the inverse is exhibiting with the volume of taxation income allocated for the sector. It is on this note that this study ignited to empirically and vividly investigate the taxation effect on investment in electricity in Nigeria. However, with the thorough reviewing of the extant studies, it was discovered that research of taxation effect on investment in electricity has not been in existence in Nigeria. The existing researches in Nigeria examined taxation effect on capital expenditure, recurrent expenditure, public expenditure (Efuntade et al., (2020); Oluwafemi et al., (2020); Daniel et al., (2019); Orbunde et al., (2022); and Adegbie et al., (2023). Other researchers were from other country such as Kenya, Swedish, Ghana and South Africa (Kithinji, (2019) Moyo et al., (2021) Bystr, (2019) Frederick & Selase, (2014) but limited their studies to electricity and its impact on workers, SMEs, and government expenditure. None of the existing studies examine the effect of taxation on investment in electricity which emanated from this study and thereby creates a research gaps among the existing studies globally.

The rationale behind this study is the analysis of how tax revenue influences government spending on electricity infrastructure projects, and provides insights into the level of financial support available for improving the country's power generation, transmission, and distribution systems. The potency and magnitude of tax revenue collected by the government on the scale and pace of investment in the electricity sector is determined. Understanding the relationship between tax revenue and government spending on electricity shed lights on the potential constraints or opportunities for advancing power sector development in Nigeria. It helps assessing the efficiency and effectiveness of tax policies in promoting sustainable energy development. Government investment in electricity infrastructure has significant socioeconomic implications for Nigeria, including improved access to reliable electricity, job creation, economic growth, and poverty reduction. By examining the effect of tax revenue on government spending in the electricity sector, policymakers understand the potential social and economic benefits of allocating tax resources to energy infrastructure projects, and determine the optimal tax structures and revenue allocation strategies to support the growth and modernization of the power sector in the country. To sum it up, analyzing the effect of tax revenue on government investment in electricity in Nigeria is essential for maximizing the impact of public funds, promoting sustainable energy development and, achieving socio-economic goals related to improving access to reliable electricity and driving economic growth

To examine the effect of taxation on investment in electricity, this study is therefore structured as follows: aside from introduction, which is segmented to section one, literature review, a review section, is also entrenched with theoretical review and empirical review, while analysis of data, and model specification which are the parts of the methodology are contained in Section three. Results and discussion are embedded with discussion of findings as appeared in section

four, while last section is conclusion and recommendations.

LITERATURE REVIEW

Investment in Electricity (INVELCT)

Electricity is the major engine that initiates industrialization, communication, technological innovation, formidable healthcare services, standard of living improvement, economic stability, stable price, and skill empowerment. Once the country development depends on electricity, it is pertinent for government to generate stable electricity in Nigeria in order to experience economic progress, industrialization, stability in price and economy. According to Frederick & Selase, (2014), electricity impact in any economy is enormously significant for country growth and development. It is important for government to provide quality, safe, and reliable and electricity services in order to support growth, development and progress of the economy. The reliable and efficient electricity supply is a definite and significant contribution towards the country sustenance. Frederick & Selase, (2014) opined further that electricity is considered as the principal initiator for country's industrial development. Many industries in Nigeria employs hydro-electric energy for production, distribution, and storage. Electricity is also a raw material employed by small businesses to thrive, and used by many household for domestic purposes which invariably enrich life quality. Incidentally, in Nigeria, electricity has been considered an indispensable service to industrial and consumers' protection. Therefore, the electricity consumption growth rate has important consequences for public and business policy. The persistent investment and usage of electricity generally increases producers' revenue, but the adoption of conventional electric generator plants ignites rising demand which may cause pollution and environmental woes which ultimately reduces producers' revenue (Hirsh & Koomey, 2015). One cannot argued the conception that electricity usage has produced huge productivity augmentations that is advantageous to the economy

The Relationship between Tax Revenue and Electricity Investment

Tax revenue collected by governments can be used to fund infrastructure development, including investments in the electricity sector. By allocating tax revenues towards building and maintaining energy infrastructure, governments can support the expansion and modernization of electricity generation, transmission, and distribution systems. Tax revenue generated from the electricity sector can be allocated towards various purposes, such as infrastructure development, electrification, energy projects, research and development in the energy sector, or general government expenditure (Adamu et al., 2018; Adegbie et al., 2023). Tax policies and allocation of tax revenue can influence the overall investment climate in the electricity sector Tax policies can directly influence investment decisions in the electricity sector.

The level of tax revenue collected by governments can impact their ability to finance energy projects. Effective tax policies enhance tax revenue and availability of public funds for energy investments or providing financial supports for the government electrification, procurement of transformers and other electricity infrastructure which invariable enhances conducive environment for industrialization where taxes revenue will be derived by the government in the long run Adamu et al., (2020); Oluwafemi et al., (2020), and Moyo et al., (2021). According to Ntekpere & Olayinka, (2020), tax revenues collected from the electricity sector can be utilized for

building and upgrading infrastructure such as transmission lines, distribution networks, and grid modernization. Adequate investment in infrastructure is crucial for ensuring a reliable and resilient electricity system. The relationship between tax revenue and electricity investment is influenced by various factors, including government policies, investor confidence, budget constraints, and the overall economic environment Hirsh & Koomey, (2015); Adegbite, (2019); Ntekpere & Olayinka, (2020); and Adegbie et al., (2023). Effective tax policies should strike a balance between generating revenue for public investment in energy infrastructure and electricity projects in the country.

Taxation

Taxation is habitually defined as levies compulsory contributed by individual and organisation from their income annually, monthly or daily. It is referred by Adegbite, (2019) as the levies forcefully remitted to the purse of the government for actualization of the expenditure. Moyo et al., (2021) opined that taxation revenue increases economic growth and government expenditures. It was stated further that taxation improves the standard living, and encourages infant industries in the country. Tax basically raises government revenue in order to actualize government expenditure but it has also been seen by Osho et al., (2019) as a channel to create cordially connection amid populace and the government. Taxation revenue assists all state government including local government to erect market place and stalls which are given out to the populace with expectation of realizing income annually for the essential service provision, law maintenance, effective productivity, employment generation and construction, and capital expenditure financing for the benefit of the populace (Adegbite & Ishola, 2022; Ogbonna & Appah, 2016). Investment in electricity is grouped under the capital expenditure which economic benefits flow into the country for many years. It is postulated that:

H_1: Taxation has effect on investment in Electricity in Nigeria

Oil Revenue (OILREV)

It is referred as the income gathered by the government on the disposal of crude oil and refined oils in Nigeria which is considered as huge revenue for steady revenue source in oil producing states. Oil discovery in Nigeria brought many development into the country and Nigerian in terms of economic development, reserve increment, education improvement, job creation and many other more development in the country. According to Adelegan & Out, (2020), government of any producing countries manages revenues from oil for national development through different investment vehicles. Boma & Daso, (2021) in their submission opined that oil revenue earnings is the major source and main revenue source for government in which it is overwhelmed with revenue distribution, capital allocations and budgeting. Revenues from oil export representing almost 90 per cent of export earnings and 70% government revenues in annual budgets. Osisanwo, (2020) advocated that oil revenue positively impacted total government earning and expenditure. It was further advocated that oil revenue's impact on government earning was significant which invariably enhanced the expenditure of government on electricity. It therefore ultimately hypothesized that:

H_2: Oil revenue has effect on investment in Electricity in Nigeria

Public Debts (PUBDEBT)

This is the income sourced by the government through either domestic or foreign borrowings or both. Government when there is paucity revenue to cater for the expenditure borrowed resources internally or externally to fulfill all the righteousness such

as salaries payment, insecurity combat capital projects, education enhancement, economic stability, inflation control, electricity supply and other indispensable responsibilities. Adegbite & Mubarak, (2018) classified public debt into external debt and internal debt, it was stated further that government borrowed reasonable amount of money in order to augment economic growth either through capital accumulation or productivity growth. Hence, loan is productive and efficient when it is constricted for economic development such as electrification, refineries, factories acquiring, infrastructural development etc. However, debt acquired to financing wars and, other expenses which are current expenditures are referred to dead weight debts. It was opined further that effective actualization and utilization of debts enhanced socio-economic growth, enhances investment in electricity, and improves standards of living which ultimately brings economic development. Therefore, it is postulated that:

H_3: Public Debts have significant effect on investment in Electricity in Nigeria.

Government Expenditure (GOVEX)

This is referred to as the expenditure on the aggregated capital and recurrent expenditure. It is referred as expenses dispensed by government for public goods provision, services, capital expenditure procurement, and government administration maintenance which principally is to promote or foster economic growth, and improve people welfare in the country (Adegbite & Mubarak, 2018). According to Boma & Daso, (2021), government expenditure includes all income expended by the government at each level to achieve stable economic goals, economic efficiency, productivity, poverty alleviation, and citizen empowerment. Hence, magnitude of government expenditure discloses the degree of government participation in an economy. The general involvement of government in security provision, administration, law and order and full intervention in capital investment, transfers and subsidies payment have expanded significantly the scope of governments globally. Adegbite & Mubarak, (2018) stated that effective monitoring of government expenditure on capital expenditure enhances the quality of the work, and thereby increase the life span of the qualified capial expenditures extensively. It is therefore postulate that:

H_4: Government Expenditure has significant effect on investment in Electricity

Theoretical Review

Benefits Received Theory (BRT)

Benefits-received theory assumes contractual relationship amidst government and taxpayers on the responsibility of the government and the civil responsibility of the taxpayers. This theory which was propounded by Knut Wicksell in 1896 and developed by Erik Lindahl in 1919 stated that there must be benefits to be derived from the payment of taxes to the government by the taxpayers. That is government reciprocates the civil responsibilities fulfilled by the taxpayers with the provision of certain public goods. The benefits received represent the ball out on the effect of taxes paying and tax burden to the citizen. According to the theory, certain goods or services are delivered by the government and the cost implication of the goods or services are paid based on the usage and benefit received proportion. This theory falls to incorporate tax policy usage for the achievement of economic stabilization or growth. This theory is useful and pertinent to this study due to the fact that electricity cannot be provided by each individual in the state, it is the responsibility of the government to invest on electricity for the good benefits of the populace in response to the payment of taxes by the tax payers. Electricity provision is the public goods and essential services which can only be made available by the government for the development of the country. Therefore, this study hinged on this theory to achieve its goal.

Theoretical Arguments on Taxation Impacts Government Investments in Electricity Sector

Tax revenue according to Oluwafemi et al., (2020) encourages government investment in energy projects, such as procurement of transformers, and rural and urban electrification. By realizing income taxes, governments can stimulate growth in the energy sector. Hirsh & Koomey, (2015) opined that tax policies that allow for accelerated depreciation or tax deductions for capital expenditures can incentivize investments in energy infrastructure. Lowering the cost of capital through tax benefits can make energy projects more attractive to investors. Implementing a carbon tax or cap-and-trade system can increase the cost of emitting greenhouse gases, which can incentivize investment in low-carbon technologies and energy efficiency measures. This can drive innovation and investments in cleaner energy solutions. Tax policies interact with regulatory frameworks in shaping investment decisions in the electricity sector. Uncertainty or frequent changes in tax regulations can create risks for investors, affecting their willingness to commit capital to long-term energy projects. Maintaining tax stability and coherence with other regulatory measures is important for ensuring a conducive investment climate (Bystr, 2019).

When it comes to government investment in the electricity sector, taxation serves as a source of revenue for the government, providing funds for investment in public infrastructure, including electricity generation, transmission, and distribution systems (Adegbie et al., 2023). According to Adegbie et al., (2023), higher tax revenues can potentially enable increased government spending on electricity infrastructure projects, also impacts the financial resources available to governments for investment in the electricity sector significantly. Higher tax rates may limit the amount of funds that can be allocated to energy projects, while lower taxes could potentially free up more resources for investment in infrastructure. In the same vein, Efuntade et al., (2020) advocated that taxation influences government decisions regarding the prioritization of infrastructure projects in the electricity sector. That is tax policies support investments in grid modernization, energy storage, and other critical infrastructure upgrades that enhance the efficiency and reliability of the electricity system.

Contrarily, Hirsh & Koomey, (2015) brought out that uncertainty around tax policies can deter investment in the energy sector. But by providing stability and predictability in tax regulations, it can create a conducive environment for long-term investments in the electricity sector. It was stated further that tax policies can influence the distribution of costs and benefits associated with electricity investments. For instance, tax incentives and lower taxes for all private sectors in the country may be seen as encouragement for prompt payment of taxes which ultimately enhances tax revenue for government investment in electricity that have societal benefits in terms of environmental protection and public health. Taxation plays a crucial role in shaping government investment in the electricity sector by impacting fiscal resources, incentivizing clean energy development, influencing infrastructure priorities, and shaping the regulatory environment. The design and implementation of tax policies can significantly impact the level and focus of government investment in electricity infrastructure (Kithinji, 2019; Moyo et al., 2021).

Empirical Review of Related Studies

In the empirical studies examined, Bystr, (2019) investigated electricity price impact selected workers from Swedish manufacturing company. Economic theory as

well as literature were employed to explicate the obtained results in this study. The study found that causal connection existed between electricity price and selected workers from Swedish manufacturing industry. It was further discovered that any price increment in electricity dispensed negative effect on workers in manufacturing company in Swedish. The study concluded that increment in the electricity price resulted into negative effect on workers in manufacturing company in Swedish. However, electricity was examined in the study as against the current study which principally focuses on taxation and investment in electricity. In another related study, fluctuations of electric power effect was examined on SMEs competitiveness and profitability by Frederick & Selase, (2014) in business district Accra, Ghana. Cross-sectional survey and mixed method approach were employed to sample seventy (70) Ghanaian SMEs through systematic sampling approach. The study further used location and electricity as inclusive criterion to select SMEs in business district, Accra. The outcome of the results collected through structured questionnaire found that without stable electricity supply, SMEs experiences low production which invariably leads to poor sales and low profitability. Geographically, this study was ignited from Ghana as against the current study which emanated from Nigeria.

Internally generated revenue (IGR) effect on Infrastructural development was examined by Adamu et al., (2018) in Gombe state. To accomplish study objective, secondary data through documentary research was adopted for data collection which invariably detected that revenue generation in the state was absolutely low to consume infrastructural development in the state. It was also detected that Gombe state relied strongly on federal allocation to finance capital project in the state. The study concluded that Gombe IGR has insignificant effect on Gombe infrastructural development but had significant effect on the expenditure on roads network, electricity and water. Thus, the study was restricted to Gombe state which is not in consonance with the current study which is for the entire country, Nigeria. in another study, Efuntade et al., (2020) examined effect of tax revenue on Nigeria government expenditure. CBN and National Bureau of Statistics Statistical Bulletins were employed as data channels which were analyzed with Regression model. It was discovered from the study that tax revenue effect on Nigeria government expenditure was statically significant. According to the conclusion of the study, increment in tax revenue depended on effective and efficient enforcement strategy which emanated from highly trained tax administrators. However, the study focused on aggregated government expenditure as different to this study which examines a single component of capital expenditure (Electricity) in Nigeria.

Moyo et al., (2021) from South Africa examined the relationship amidst taxation, economic growth and government expenditure in South Africa from 1991 to 2018 using co-integration method and ARDL as well as granger causality to examine variables incorporated in the study. Outcomes from the analysis advocated that long-term connection existed amidst taxation, economic growth and government expenditure, and eventually correlated with one another in the long run. ARDL results discovered a significant positive connection between economic growth and government expenditure. Also, according to the study, tax revenue had positive significant connection with South Africa economic growth. The study finally concluded that taxation possessed positive impact on South Africa's government expenditure which ultimately dispensed economic growth in South Africa. Though, this study was confined to South Africa but not extended to Nigeria.

Oluwafemi et al., (2020) evaluated tax revenues' effect on Nigeria capital expenditures. The outcome of the regression analysis of data collected through FIRS, CBN and NBS statistical bulletin from 1989 to 2018 showed that a statistical, significant and positive effect mounted on capital expenditure by nonoil revenue in Nigeria. Regression results also discovered that the relationship existed between capital expenditure and tax revenues are statistically insignificant. The conclusion of the study dispensed that tax revenue had no impact on Nigeria capital expenditure was. Consequently, the study was on tax revenue effect on capital expenditure as absolutely different to this study which majorly examined tax revenue on investment in electricity. In the same vein, Daniel et al., (2019) evaluated tax revenues influence on Nigeria public expenditure between 1994 and 2016. Granger causality, stationary, error correction, and co-integration tests were the major analytical estimates for the study. The study discovered that all the components of taxation employed possessed positive significant effect on Nigeria government expenditure. Also, taxation, according to Daniel et al., (2019), possessed bidirectional causal relationship with Nigeria government expenditure. The study only focused on aggregated capital expenditure as not in tandem with this study which focused on electricity as a component of capital expenditure in Nigeria.

Kithinji, (2019) established taxation effect on Kenya government expenditure. Data was gotten from Kenya NBS, and analyzed with regression model and descriptive statistics. The study revealed that Kenya government revenue influenced government expenditure positively, significantly and progressively. The study advocated that government must urgently reduce recurrent expenditures, and borrow more or upsurge tax revenues in order to cater for her expenditure. However, the study was carried out in Kenya, but its economic policy cannot be implemented in Nigeria.

Orbunde et al., (2022) critically analyzed oil tax revenue impact on budget performance in Nigeria between 1996 and 2020. Data collected through Accountant general office and CBN statistical reports between 1996 and 2020 were analyzed with ARDL and descriptive statistics. Outcome showed that oil tax revenue had positive significant effect on Nigeria budget performance. Nonetheless, the study was constricted to budget performance but electricity investigation was not inclusive as fulfilled by the current study. Adegbie et al., (2023) evaluated tax revenue effect on federal government expenditure on power and road between 1994 and 2021. Data were garnered through CBN, Budget and Fiscal Policy office, Nigerian Exchange and FIRS bulletins. Multiple regression which was engaged to analyze collected data invariably discovered that government road expenditure and government power expenditure were impacted significantly by tax revenue. The study eventually concluded that tax revenue enhanced power and roads expenditure significantly in Nigeria. But the study examined both road and power together with the scope from 1994 to 2021 as absolutely different from the current study which examined electricity and taxation only from 1981 to 2021.

However, with thorough reviewing of the extant studies, it was ultimately discovered that research on taxation effect on government investment in electricity has not been in existence in Nigeria. The existing researchers in Nigeria examined taxation effect on capital expenditure, recurrent expenditure, public expenditure (Efuntade et al., (2020); Oluwafemi et al., (2020); Daniel et al., (2019); Orbunde et al., (2022); and Adegbie et al., (2023). Other researchers were from other country such as Kenya,

Swedish, Ghana and South Africa (Kithinji, (2019) Moyo et al., (2021) Bystr, (2019) Frederick & Selase, (2014) but limited their studies to electricity and its impact on workers, SMEs, and government expenditure. None of the existing studies examine the effect of taxation on investment in electricity which made this study unique, and thereby creates research gaps among the existing studies.

Conceptual Framework

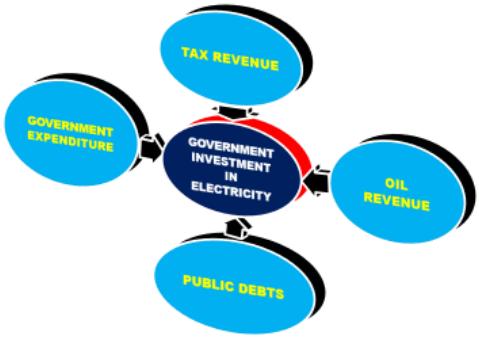

Fig 1: Effect of Tax Revenue on Government Investment in Electricity

METHODOLOGY

This study appraised the effect of taxation on electricity in Nigeria. Data on electricity and taxation were realized through the ministry of works, power and housing as well as the CBN statistical Bulletins from 1981 to 2022. The relevant and necessary data collected were experimentally analyzed with regression, Vector Error Correlation Model (VECM), and Cointegration analysis. Unit root test was also incorporated in this study for effective affirmation of stationary among the variables.

Model Specification

To gauge how tax income impacts government investment in electricity in Nigeria, tax income which is the independent variable is measured as the aggregation of all the taxes collected by the federal government in Nigeria. Government Investment in electricity was captured as dependent variable which is as the summation of both the capital expenditure and recurrent expenditure on electricity. Oil revenue is measured with revenue realized by the government from oil in the country, while government expenditure is measured as the summation of all expenditures on recurrent and capital expenditures in Nigeria. Thus, the models is here by stated as follows:

$$\mathbf{LOGINVELCT = } f\mathbf{(LOGTAX, LOGOILREV, LOGPUBDEBT, LOGGOVEX, } \mu\mathbf{)} \quad \textit{(1)}$$

Using multiple regression analysis, the model was modified as follows;

$$\mathbf{LOGINVELCT = } \beta_0 + \beta_1 \mathbf{LOGTAX} + \beta_2 \mathbf{LOGOILREV} + \beta_3 \mathbf{LOGPUBDEBT} + \beta_4 \mathbf{LOGGOVEX} + \mu \quad \textit{(2)}$$

Econometric model of VECM are as follows:

$$\Delta LOGINVELCT_t = \alpha + \sum_{i=1}^{k-1} \beta_i \Delta LOGINVELCT_{t-i} + \sum_{m=1}^{k-1} \emptyset_m \Delta LOGTAX_{t-m} + \sum_{n=1}^{k-1} \emptyset_n \Delta LOGOILREV_{t-n} + \sum_{j=1}^{k-1} \emptyset_i \Delta LOGPUBDEBT_{t-j} + \sum_{s=1}^{k-1} \emptyset_s \Delta LOGGOVEX_{t-s} + \lambda ECT_{t-1} + \mu_{2t} \quad \textbf{(3)}$$

$$\Delta LOGTAX_t = \alpha + \sum_{i=1}^{k-1} \beta_i \Delta LOGINVELCT_{t-i} + \sum_{m=1}^{k-1} \emptyset_m \Delta LOGTAX_{t-m} + \sum_{n=1}^{k-1} \emptyset_n \Delta LOGOILREV_{t-n} + \sum_{j=1}^{k-1} \emptyset_i \Delta LOGPUBDEBT_{t-j} + \sum_{s=1}^{k-1} \emptyset_s \Delta LOGGOVEX_{t-s} + \lambda ECT_{t-1} + \mu_{3t} \quad \textbf{(4)}$$

$$\Delta LOGOILREV_t = \alpha + \sum_{i=1}^{k-1} \beta_i \Delta LOGINVELCT_{t-i} + \sum_{m=1}^{k-1} \emptyset_m \Delta LOGTAX_{t-m} + \sum_{n=1}^{k-1} \emptyset_n \Delta LOGOILREV_{t-n} + \sum_{j=1}^{k-1} \emptyset_i \Delta LOGPUBDEBT_{t-j} + \sum_{s=1}^{k-1} \emptyset_s \Delta LOGGOVEX_{t-s} + \lambda ECT_{t-1} + \mu_{4t} \quad \textbf{(5)}$$

$$\Delta LOGPUBDEBT_t = \alpha + \sum_{i=1}^{k-1} \beta_i \Delta LOGINVELCT_{t-i} + \sum_{m=1}^{k-1} \emptyset_m \Delta LOGTAX_{t-m} + \sum_{n=1}^{k-1} \emptyset_n \Delta LOGOILREV_{t-n} + \sum_{j=1}^{k-1} \emptyset_i \Delta LOGPUBDEBT_{t-j} + \sum_{s=1}^{k-1} \emptyset_s \Delta LOGGOVEX_{t-s} + \lambda ECT_{t-1} + \mu_{5t} \quad \textbf{(6)}$$

$$\Delta LOGGOVEX_t = \alpha + \sum_{i=1}^{k-1} \beta_i \Delta LOGINVELCT_{t-i} + \sum_{m=1}^{k-1} \emptyset_m \Delta LOGTAX_{t-m} + \sum_{n=1}^{k-1} \emptyset_n \Delta LOGOILREV_{t-n} + \sum_{j=1}^{k-1} \emptyset_i \Delta LOGPUBDEBT_{t-j} + \sum_{s=1}^{k-1} \emptyset_s \Delta LOGGOVEX_{t-s} + \lambda ECT_{t-1} + \mu_{6t} \quad \textbf{(7)}$$

Where α is intercepts, β_i, $\emptyset_m$, $\emptyset_n$ $\emptyset_i$ and $\emptyset_s$ are the coefficients of LOGINVELCT, LOGTAX, LOGOILREV, LOGPUBDEBT, and LOGGOVEX respectively while μ_{1-6t} are error terms.

Measurement of Variables

Variables	Measurement
Government Investment in Electricity	This is the total value of money expended on the procurement of electricity infrastructures, rural electrification, procurement of transformers, and building and maintenance of energy infrastructure by the government (Adegbie et al., 2023). This value was extracted from CBN statistical Bulletin 2022.
Tax income	The total monetary value of all taxes collected by the government in the country. The summation of the income realized by the government on all the taxes (Daniel et al., (2019); and Efuntade et al., (2020). CBN statistical Bulletin 2022
Oil Revenue	Aggregated value of revenue realized from oil by the government in the country (Boma & Daso, (2021); and Orbunde et al., (2022) The data were gotten from CBN statistical Bulletin.
Public Debts	Aggregated value of both domestic and international debts owned by the Government (Adegbite & Mubarak, (2018) . This was also extracted from CBN statistical Bulletin 2022
Government expenditure	Government expenditure was measured as the summation of all expenditures on recurrent and capital expenditures in Nigeria (Moyo et al., (2021); and (Orbunde et al., (2022). This value was also extracted from CBN statistical Bulletin 2022.

Results and Discussion

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
INVELCT	42	96.80316	141.6361	.0312084	448.9378
TAX	42	1246.581	1650.065	2.9841	6397.141
OILREV	42	2533.519	2694.562	7.253	8878.97
GOVEX	42	2494.307	3189.896	9.6365	12164.15
PUBDEBT	42	2311.985	3497.686	2.3312	15855.23

Source: Author's Compilation (2024)

Table 1 which is descriptive statistics of the variables involved in investigating the effect of taxation on investment in Nigeria. It was discovered that the minimum investment in electricity (INVELCT) by the government is .0312084 while the maximum investment in electricity is 448.9378. Tax income realized by the government has 2.9841 billon as the minimum value while 6397.141 billion is the maximum value. Also, the minimum value of the revenue realized by the government from oil is 7.253 billon while the maximum revenue from oil is 8878.97 billon. This is a signal that government realizes enormous income from oil for the implementation of fiscal responsibilities in Nigeria. In the same vein, government expenditure (GOVEX) possessed minimum value of 9.6365 billion

and maximum value of 12164.15 billion. Lastly, public debt (PUBDEBT) has minimum and maximum value of 2.3312 and 15855.23 respectively.

Table 2: Correlation Matrix

	LOGINVELCT	LOGTAX	LOGOILREV	LOGPUBDEBT	LOGGOVEX
LOGINVELCT	1.0000				
LOGTAX	0.5805***	1.0000			
LOGOILREV	0.5500***	0.4761	1.0000		
LOGPUBDEBT	0.3249***	0.4423***	0.3378***	1.0000	
LOGGOVEX	0.3802***	0.3956	0.2791***	0.4598***	1.0000

Significant statistics in parentheses $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Author's Compilation (2024)

Table 2 which is correlation matrix advocated that the incorporated variables were free from multicollinearity due to the fact that none of the variable coefficient value reached 0.8 which is the benchmark for multicollinearity entry. Therefore all variables has good and statistical relationship with each other as stated in Table 2. That is, LOGTAX, LOGOILREV, LOGPUBDEBT and LOGGOVEX interacted with LOGINVELCT with statistical values of 0.5805*, 0.5500*, 0.3249* and 0.3802* respectively. It is further noted that LOGOILREV, LOGPUBDEBT and LOGGOVEX possessed good interaction with LOGTAX with statistical values of 0.4761, 0.4423* and 0.3956 respectively. Also, LOGPUBDEBT and LOGGOVEX have been realized having good connection with LOGOILREV with reliable statistical values of 0.3378* and 0.2791* respectively. Finally, LOGGOVEX relationship with LOGPUBDEBT are very cordially with statistical value of 0.4598*

Table 3: VIF Test

Variable	**VIF**	**1/VIF**
LOGGOVEX	157.73	0.006340
LOGTAX	125.92	0.007942
LOGOILREV	24.33	0.041104
LOGPUBDEBT	4.18	0.238988
Mean VIF	78.04	

Source: Author's Compilation (2024)

VIF was captured due to the fact that heteroskedacity might has perceived in the results which termed the results spurious. Heteroskedacity was discovered in Table 3 because of LOGGOVEX, LOGTAX and LOGOILREV values of 157.73, 125.92, and 24.33 respectively are more than 10. This called for robust regression as appeared in column two in Table 3.

Table 4: Regression Analysis

LOGINVELCT	(1) Regression	(2) Robust Regression
LOGTAX	0.598	0.598***
	(1.39)	(3.28)
LOGOILREV	-0.333*	-0.333*
	(-1.70)	(-1.96)
LOGPUBDEBT	-0.0727	-0.0727
	(-0.76)	(-0.68)
LOGGOVEX	1.089**	1.089*
	(2.08)	(1.89)
_cons	-5.500***	-5.500***
	(-8.30)	(-8.23)
N	41	41
R^2	0.766	0.766
adj. R^2	0.763	0.763

t statistics in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: Author's Compilation (2024)

Table 4 exhibited the effect of taxation on electrification in Nigeria. The first column in Table 4 showed the regression results of the independent variables on investment in electricity. But it was discovered that the results are overwhelmed with the spurious results and heteroskedasticity as shown in Table 3 which prompted the exigent test of robust regression in the second column of Table 4. According to robust regression result, LOGTAX has positive effect on investment in electricity due to the fact that a percent upward movement of taxation significantly upsurge investment in electricity by 0.5%. This significantly displayed positive improvement of taxation on investment in electricity in the country. LOGOILREV negatively downplayed investment in electricity because according to Table 4, a percentage increase in LOGOILREV, eventually downplayed LOGTAX by 0.33% significantly at 10% significant yardstick. Further, public debt (LOGPUBDEBT) has been notified having a negative significant effect on investment in electricity in the country. Lastly, expenditures of government (LOGGOVEX) have been noticed having positive tax effect on investment in electricity. This displayed that investment in electricity increases by 1.08%– as a results of a unit increment in expenditure of government in Nigeria

Table 5: Lag Selection

Lag	LL	LR	Df	P	FPE	AIC	HQIC	SBIC
0	-185.539				.020447	10.2994	10.3762	10.5171
1	-28.8218	313.43	25	0.000	.000017	3.17956	3.64004	4.48571
2	-1.19388	55.256	25	0.000	.000016	3.03751	3.88172	5.43211
3	16.2669	34.921	25	0.090	.000029	3.44503	4.67298	6.9281
4	60.5075	88.481*	25	0.000	.000016*	2.405*	4.01668*	6.97652*

Source: Author's Compilation (2024)

It is very pertinent to gauge the actual lag for this study because of overestimation and under estimation of lag so as to avail spurious results. To that effect, Lag selection test was done as displayed in Table 5 which invariable discovered lag 4 because of FPE possesses asterisked value of .000016*, AIC with value of 2.405*, SBIC and HQIC with value of 6.97652* and 4.01668* respectively. Therefore Lag 4 is the most suitable lag for this study.

Table 6: Unit root Test

Variable	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Prob	Stationary level
LOGTAX	-4.418	-3.662	-2.964	-2.614	0.003	I(I)
LOGINVELCT	-5.929	-3.662	-2.964	-2.614	0.000	I(I)
LOGOILREV	-4.729	-3.662	-2.964	-2.614	0.001	I(I)
LOGPUBDEBT	-3.673	-3.662	-2.964	-2.614	0.063	I(I)
LOGGOVEX	-4.304	-3.662	-2.964	-2.614	0.004	I(I)

Source: Author's Compilation (2024)

To check the stationary of the variables incorporated, Unit root test through ADF was chosen. It was found that all the incorporated variables were not stationary at level but absolutely stationary at first level due to the fact that test statistic which is the yardstick for stationary determinant were seen greater that all critical vales as shown in Table 6 couple with all the probability values that below 0.05. These results therefore, request for the investigation of cointegration in order to realize the numbers of cointegration equation or vectors among the variables.

Table 7: Cointegration Analysis

Maximum Rank	Parms	LL	Eigenvalue	Trace Statistic	5% Critical Value
0	80	10.826897	.	99.3612	68.52
1	89	30.350506	0.65192	60.3140	47.21
2	96	41.651772	0.45713	37.7115	29.68
3	101	51.910362	0.42565	17.1943	15.41
4	104	60.506166	0.37164	0.0027*	3.76
5	105	60.50751	0.00007		

Source: Author's Compilation (2024)

It is important to examine whether the incorporated variables are cointegrated. To this effect, cointegration analysis was ignited as shown in Table 7. It is discovered that there are four or more cointegration vectors or equations among the variables. It further explained that all the variables are cointegrated because of the existence of four or more cointegration equations. This further called for the VECM to examine both the short run and long run relationship among the variables.

Table 8: Vector Error-Correction Model

Equation	Parms	RMSE	R-sq	chi2	P>chi2
D_LOGINVELCT	7	.679244	0.3174	14.88139	0.0376
D_LOGTAX	7	.198615	0.7182	81.54513	0.0000
D_LOGOILREV	7	.365756	0.3768	19.34773	0.0072
D_LOGPUBDEBT	7	.430224	0.3608	18.05951	0.0117
D_LOGGOVEX	7	.199482	0.5473	38.68978	0.0000
Log likelihood = -27.71628	Det(Sigma_ml) = 2.85e-06	AIC = 3.421347	HQIC = 4.018219	SBIC = 5.084909	

Source: Author's Compilation (2024)

Table 8 dispenses information on the short run relationship amidst all the variable incorporated in the study. It was discovered that P>chi2 values of the variables are below 0.05 which exhibited that the short run relationship existed amidst all the variables incorporated in this study.

Table 9: Johansen Normalization Restriction Imposed (JNRI)

Beta	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
_ce1	1	.	.	.	.	.
LOGINVELCT						
LOGTAX	-12.63517	1.952168	-6.47	0.000	-16.46135	-8.808993
LOGOILREV	-.1701033	1.072913	-0.16	0.874	-2.272974	1.932767
LOGPUBDEBT	.912939	.4020979	2.27	0.023	.1248417	1.701036
LOGGOVEX	11.65439	2.418801	4.82	0.000	6.913632	16.39516
CONS	-9.997591	.	.	.	.	

Source: Author's Compilation (2024)

JNRI was also employed to gauge the long run relationship among variables as shown in Table 9. It was discovered asymmetrically that LOGTAX has positive effect on investment in electricity due to the fact that a percent upward movement of taxation significantly upsurge investment in electricity by 12%. This significantly displayed positive impact of taxation on investment in electricity in Nigeria in the long run ($\beta = -12.63517$, $P>z = 0.000 < 0.05$). Also, LOGOILREV has positively impacted investment in electricity insignificantly by 0.17% ($\beta = -.1701033$, $P>z = 0.874 > 0.05$). Furthermore, public debt has been notified having a negative significant effect on investment in electricity ($\beta = .912939$, $P>z = 0.023 < 0.05$). That is according to Table 9, a

percentage increases in LOGPUBDEBT eventually downplayed investment in electricity by 0.9% significantly at 0.05 significant parameter. In the same vein, LOGGOVEX has been discovered having negative effect on investment in electricity. This displayed that a percentage increase in expenditure of government reduces investment in electricity by 11.08% significantly ($\beta = 11.65439$, $P>z = 0.000 < 0.05$) in Nigeria.

Table 10: Eigenvalue Stability Condition (ESC)

Eigenvalue	Modulus
1	1
1	1
1	1
1	1
.4908293	.490829
-.3567123 + .2200568i	.419128
-.3567123 - .2200568i	.419128
-.2504248	.250425
.154625 + .1917388i	.246318
.154625 - .1917388i	.246318

Source: Author's Compilation (2024)

The VECM specification imposes 4 unit moduli. ESC was also employed to gauge the stability of the variables incorporated as shown in Table 10. This dispenses that all incorporated variables passed the stability test due to the fact that none of the value in Table 10 fell below 0.05 benchmark and significant level. Therefore, all the incorporated variables are significantly stable.

Discussion of Findings

This study examines the contribution of taxation on investment in electricity in Nigeria. Data were garnered from CBN statistical Bulletin from 1981 to 2022. Data garnered were absolutely scrutinized with regression, unit root, stability test, cointegration, VECM, and other pertinent analytical tools. The findings display that LOGTAX has positive effect on investment in electricity due to the fact that a percent upward movement of taxation significantly upsurge investment in electricity by 12%. This significantly displayed positive improvement of taxation on investment in electricity in Nigeria both in the short run and long run. This further shows that 12% influx of revenue garnered from taxation is expended on investment in electricity such as electrification, procurement of electric transformers, and payment of workers and contractors' remunerations in the country. This submission are in line with findings of Festus et al., 2023; Aigheyisi, (2013); Osho et al., (2019); and Adamu et al., (2018) but against the findings of Mulinge, (2016); Aigheyisi, 2(013) and Adamu et al., (2020)

Also, OILREV has positively impacted investment in electricity insignificantly by 0.17% as being discovered from analysis results. This dispensed that the revenue from oil sectors absolutely solidified with revenue from taxation to upsurge investment in electricity and electrification in Nigeria. The policy implication is that the more is the income from oil, the more would be the increment in investment in electricity in Nigeria. This submission is in tandem with Radhi, (2018); Adegbite, (2019); Adegbite, (2021); and Oluwafemi et al., (2020); but not in tandem with the submission of Adamu et al., (2020).

Furthermore, public debt has been notified having a negative significant effect on investment in electricity in the country. That is a percentage increase in public debt, eventually downplayed investment in electricity significantly by 0.9% at 0.05 significant parameter. The implication is that

government in Nigeria has already overwhelmed with the financing and repayment of loans which invariably downplaying the revenue at hand to be invested on the electricity and electrification. Hence, the more the government expended revenue on financing and repayment of loan, the lesser would be the income earmarked for electricity investment in the country. This advocacy is in line with the findings of Igudia, (2021); Adegbite & Mubarak, (2018). In the same vein, LOGGOVEX has been discovered having negative effect on investment in electricity. This displayed that a percentage increase in expenditure of government reduces investment in electricity significantly by 11.08% significantly in Nigeria. The implication is that the higher the income expended by government on other components of capital and recurrent expenditure, the lesser would government invest on electricity in the country. This affirmation is supported by the submission of Adegbite & Agboola, (2019); Bappahyaya et al., (2021); Mamuda & Alhassan, 2021; Oladejo & Alade, (2017) but rejected the submission of Adamu et al., (2020); Adegbite (2021); Adegbite & Mubarak, (2018); and Moyo et al., (2021).

CONCLUSION

This study appraised the effect of taxation on electricity in Nigeria. Data on electricity and taxation were realized through the ministry of works, power and housing as well as the CBN statistical Bulletins from 1981 to 2022. The necessary data collected were experimentally analyzed with regression, VECM, and Cointegration analysis. Unit root test was also incorporated in this study for effective affirmation of stationary among the variables. Findings dispensed that taxation has positive effect on investment in electricity due to the fact that a percent upward movement of taxation significantly upsurge investment in electricity. Revenue from oil has positively impacted investment in electricity insignificantly. Public debt has been notified having a negative significant effect on investment in electricity in the country. Finally, government expenditure has been discovered having negative effect on investment in electricity in Nigeria. Conclusively, taxation has positive significant impact on the investment in electricity in Nigeria. The potency of electricity in improving economic status and enhancing people standard of living in Nigeria is indispensable which cannot be underestimated but it can be achieved through revenue from taxation. Investment in electricity dispenses economic development, economic stability, foreign direct investment, and enhancement in education and technology with the full involvement of revenue from taxation.

It is therefore recommended that more devices should be made available to automatically allocate certain percentage from tax revenue for effective utilization on electricity investment in the country. Also, government should monitor the full implementation of allocated resources on electricity investment so that it will not be diverted into frivolity in the country. Tax income should be concentrated towards investment in electricity in order to encourage both the indigenous and foreign investment for the involvement of private sector in electricity investment, and increment in taxation revenue for the government. The private sector's continuation to government revenue enhances government financial sustainability in the country.

REFERENCES

Adamu, A., Turawa, A., & Mas'ud, A. (2020). The Nexus between Tax Revenue and Government Expenditure in Nigeria ; Evidence from Toda -

Yamamoto Causality Test. *International Journal of Innovation, Creativity and Change*, *11*(1), 458–472.

Adamu, U., Mahdi, A. B., & Yakubu, L. (2018). Effect of Revenue Generation on Infrastuctural Development of Gombe. *Global Journal of Applied, Management and Social Sciences (GOJAMSS)*, *15*(June), 1–15.

Adegbie, f. F., Peter, O. I., Zion, A., Adegbie, A., & Peter, O. I. (2023). Federal Tax Revenue and Government Expenditure on Roads and Power in Nigeria. *International Journal of Economics, Business and Management Research*, *7*(06), 277–306. https://doi.org/10.51505/IJEBMR.2023.7618

Adegbite T. A. (2021). Non-Oil Taxation and Government Expenditure in Nigeria : Feedback From Co-Integration Analysis. *The Journal of Economic Research & Business Administration*, *3*(137), 15–24.

Adegbite, T. A., & Usman, O. A. (2017). Empirical Analysis Of The Effect Of Taxation On Investment In Nigeria. *International Journal in Commerce, IT & Social Sciences*, *4*(8), 1–11.

Adegbite, T.A., & Agboola, O. O. (2019). Analysis of the Impact of Taxation on Public Expenditure in Nigeria. *LASU Journal of Management Sciences*, *5*(1), 10–17.

Adegbite, T.A., & Mubarak, S. (2018). Analysis of the Impact of Public Debt and Recurrent Expenditure on Economic Growth in Nigeria. *LASU Journal of Management Sciences, 4(1): 72-79.*, *4*(1), 72–79.

Adegbite, Tajudeen Adejare. (2019). Does Taxation has impact on Investment ? An Empirical Response from Co-integration. *Annals of Spiru Haret University. Economic Series*, *19*(3), 95–112.

Adegbite, Tajudeen Adejare, & Ishola, S. (2022). Tax Implication on Recurrent Expenditure Internally Generated Revenue : Analysis. *South Asian Journal of Finance*, *2*(2), 133–145.

Adelegan, A. E., & Out, E. (2020). Government Expenditure and Oil Revenue in Nigeria. *East African Scholars Journal of Economics, Business and Management*, *4464*(5), 420–426. https://doi.org/10.36349/EASJEBM.2020.v03i05.004

Aigheyisi, O. S. (2013). The Relative Impacts of Federal Capital and Recurrent Expenditures on Nigeria ' s Economy (1980-2011). *American Journal of Economics*, *3*(5), 210–221. https://doi.org/10.5923/j.economics.20130305.02

Bappahyaya, B., Abiah, F. K., & Bello, F. (2021). Impact of Government Expenditure on Economic Growth : Evidence from Nigeria. *European Scientific Journal*, *16*(7). https://doi.org/10.19044/esj.2020.v16n7p69

Boma, T., & Daso, A. (2021). Oil revenue and government expenditure in nigeria. *British International Journal of Education and Social Sciences*, *8*(12), 47–58.

Bystr, J. (2019). *The impact of electricity prices on the number of workers. A study in the Swedish manufacturing industry*.

Daniel, E., Patricia, E., & Samuel, I. (2019). Tax Revenues , Duties Evidence. *Saudi Journal of Economics and Finance*, *3*(7), 264–282. https://doi.org/10.21276/sjef.2019.3.7.1

Efuntade, A. O., Efuntade, O. O., & Akinola, A. O. (2020). Tax Revenue and Its Effect on Government Expenditure in Nigeria. *The International Journal of Business and Management*, *8*(9), 279–

286.

Frederick, D., & Selase, A. E. (2014). The Effect of Electric Power Fluctuations on the Profitability and Competitiveness of SMEs : A Study of SMEs within the Accra Business District of Ghana. *Journal of Competitiveness*, *6*(3), 32–48. https://doi.org/10.7441/joc.2014.03.03

Hirsh, R. F., & Koomey, J. G. (2015). Electricity Consumption and Economic Growth : A New Relationship with Significant. *The Electricity Journal*, *28*(9), 72–84. https://doi.org/10.1016/j.tej.2015.10.002

Igudia, P. O. (2021). Impact of External Debt Servicing on Human Capital Development in Nigeria : 1960-2019. *International Journal of Business & Law Research*, *9*(3), 38–55.

Kithinji, A. M. (2019). The Effect of Taxation on Government Expenditure in. *International Journal of Business Management and Economic Research(IJBMER)*, *10*(5), 1679–1686.

Mamuda, A. U., & Alhassan, I. (2021). Tax Revenue and its Impact on the Economic Growth of Nigeria. *International Academic Journal of Management and Marketing*, *6*(6), 112–123.

Moyo, D., Samour, A., & Tursoy, T. (2021). The Nexus Between Taxation , Government Expenditure , and Economic Growth in South Africa . New evidence from combined co-integration test. *Estudios Economia Aplicada*, *39*(3), 3.

Mulinge, J. K. (2016). Effects of Recurrent Public Expenditure on Economic Growth in Kenya. *International Journal of Economics, Commerce and Management, United Kingdom*, *IV*(8), 508–540.

Ntekpere, U. A., & Olayinka, I. M. (2020). Effect of Tax Revenue on Public Debt and Capital Expenditure in Nigeria. *Journal of Taxation and Economic Development*, *19*(2), 82–103.

Ogbonna, G. N., & Appah, E. (2016). Effect of Tax Administration and Revenue on Economic Growth in Nigeria. *Research Journal of Finance and Accounting*, *7*(13), 49–58.

Oladejo, M. O., & Alade, B. J. (2017). Internally Generated Revenue And The Revenue Profile Of Selected South Western State Governments , In Nigeria. *International Journal of Research in Business Management*, *5*(12), 13–28.

Oluwafemi, A., Adetola, R., & Atinuke, K. (2020). Tax Revenue and Capital Expenditure in Nigeria. *International Accounting and Taxation Research Group*, *4*(1), 132–147.

Orbunde, B., Lambe, I., & Njoku, I. O. (2022). Effects of Oil Revenue Generation on Government Budget Performance in Nigeria. *Bingham International Journal of Accounting and Finance (BIJAF)*, *2*(2), 98–111.

Osho, A., Olemija, T. L., & Falade, A. B. (2019). The Influence of Tax Revenue on Government Capital Expenditure and Economic Growth in Nigeria. *European Journal of Business and Management*, *11*(2), 38–49. https://doi.org/10.7176/EJBM

Osisanwo, B. G. (2020). The Impact of Oil Export Earnings on Government Income and Expenditure : A Policy Implication on Sustainable Development of the Nigerian Economy. *Iranian Economics Review*, *24*(3), 621–638.

Radhi, H. (2018). The relationship between government expenditure and GDP in non- oil Iraqi economy. *Journal of the Arab American University*, *4*(2), 46–71.