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Tax Revenue and Sustainable Economic Development in Nigeria: An Empirical Analysis of the Moderating Effect of Information Technology (IT)

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Abstract

This study investigated how tax revenue generated by the Federal Government of Nigeria sod utilized affected the country's economic development looking at the moderating influence of use of information technology for the tax revenue drive. Tax revenue is proxied with federal taxes of Company income tax, Petroleum profit tax and tertiary education tax while economic development was proxied with real gross domestic product and human development index. Expost facto research design was adopted while the study period covers a 32-year period (1990 to 2021). Time series data from Federal Inland Revenue Service, Central Bank of Nigeria's Statistical Bulletin, and National Bureau of Statistics were gathered and analyzed to achieve the objectives of the study. Partial correlation and regression were wed testing of the hypothesis. The results of the study further showed that information technology influenced the relationship between Tax revenue and economic development in Nigeria though its positive influence on that relationship was not significant. The study concludes that if tax revenues are properly harnessed, they have the capacity to boost economic development in Nigeria in view of the very immense contributions they make on Real Gross Domestic Product and Human Development Index. The study further concluded that the adoption of information technology has over time proved to have facilitated and propelled tax administration in Nigeria and indeed, promoted her economic development. Based on the conclusions, the study therefore recommended that Information Technology should be fully deployed to facilitate the administration of taxes in Nigeria while state governments should be mandated to tow this line. Further, government should initiate measures to discourage the negotiation of tax liabilities; encourage investments in petroleum refining by granting tax incentives, tax holiday's, and pioneer statuses to companies; tertiary educational institutions should be granted unrestricted access to Tertiary Education Fund but their activities must be closely monitored to ensure adequate utilization of such revenues.

Keywords: *Federal Tax Revenue, Information Technology, Nigeria, Sustainable Economic development*

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Background to the Study

In recent times, economic development indicators with regard to Nigeria as a nation have not been favourable. There are spikes in inflation, a dramatic increase in unemployment, sluggish economic growth rate as well as a substantive decrease in foreign reserves and a dramatic fall in the Nigerian's currency value, with Naira tumbling downwards against the dollars in the forex market, and all of these signify economic downturn for the nation. Consequently, macroeconomic objectives have not been realistic and thus Nigeria is saddled with the responsibility of evaluating and realigning fiscal policies towards attending to these negative economic indicators that could lead her to the part of economic development. While there have been arguments in several fora that the economy is on the right part towards recovery as such there should be optimism that developmental activities will continue to be witnessed. However, the rate of recovery cannot be said to be at the expected and accepted rate (Kalagbor & Ordu, 2019, Effiong & Obun, 2020; Obara et al., 2022), therefore calls for a policy check as well as retraction on the policy thrust that has been underlined that will result in economic recovery becomes necessary (Obara et al., 2022). One of such policy thrust is the issue of adequate use of taxation towards pursuit of economic developmental objectives.

However, in the midst of this call for increased taxation revenue, there have been issues of adequate utilization of the already generated revenue for developmental purposes so as to get the nation on track towards ensuring the betterment of its citizens through infrastructure provision and development. It is argued that as important tax revenue is the use of tax as an instrument of fiscal policy to achieve economic growth in most less developed countries cannot be reliable because of dwindling level of revenue generation (Ironkwe & Ordu, 2016). But different scenarios play out in developed economies. ln many rich countries, tax constitutes 30-40 percent of the GDP (Golit, 2008; TJN, 2012), Consequent upon this, changing or fine-tuning tax rates has been used to influence or achieve macroeconomic stability. A critical example of governments that have influenced their economic development through revenue from taxes are, Canada, United States, Netherland, United Kingdom (TIN, 2012, Ordu & Omesi, 2020). They derive substantial revenue from Personal income tax, Capital gains tax, Company Income tax, Value Added Tax, Import Duties and have used same to create prosperity (Omesi & Ordu, 2022).

Economic development is defined as a policy intervention effort which aims at the economic and social well-being of people (Todero & Smith, 2011). In other words, it could be referred to as policy maker's actions which promote the health, political and social well-being of people. Common areas of development include literacy rates, life expectancy, unemployment, poverty rate etc. Thus, it is possible to have economic growth without economic development. Revenue is needed to fund both growth and development objectives in any nation. Sadly, the increase in revenue in Nigeria as well as increase in expenditure has not translated into the development of its citizens. There have not been increase in the standard of living and the income level of the people indicated in recent reports as earlier stated. Economic developmental pursuits have not been yielding result. The only way economic development can be pursued toward actualization is through effective and efficient drive for revenue generation activities (Ironkwe & Ordu, 2016). And more recently, it is advocated globally that countries should move from the concept of

economic development to that of "sustainable economic development" (Ordu & Nkwoji, 2019, p6). This is the level of development that can be sustained on the long run. To achieve this however, enormous amount of funding is required, and tax revenue is one of the major ways this enormous amount of funding is generated.

Sustainable economic development is critical in this contemporary time and it's been advocated by international bodies such UN, World Bank, IMF and the likes. Sustainable development refers to the ability to adequately, lake care of present needs without jeopardizing the possibility of meeting the needs of future generations. It is not about growth in gross domestic product (GDP) but it bothers on the impact of government decisions on the livelihood of a people, the environment, the economy, and the well-being of generations to come. This is not to say that suing for economic growth and development is a bad idea. No. It implies that sustainable development brings to bear, the ecological and human dimensions to the development process. It is no doubt that in her approach towards addressing social, economic, and environmental issues, Nigeria has not achieved so much in terms of developmental goals. Instead of outright eradication or reasonable reduction, we have rather witnessed increases in such problems as environmental pollution, poverty, flooding, corruption, ethnicity, and unemployment. These are serious issues that bother on the country's quest for economic development. In a bid to address them and fast track the process of development, Nigeria and other member countries of the United Nations adopted the Millennium Development Goals (MDGs) in 2000, and revising and setting up new targets to meet in 2030.

The United Nations, according to Todaro and Smith (2011), adopted the following set of eight goals that were expected to be achieved by 2015: eradication of extreme poverty and hunger, achievement of universal primary education; promotion of gender equality and empowerment of women, reduction in child mortality improvement in mental health; combating HIV/AIDS, malaria, and oilier diseases: ensuring environmental sustainability, and the development of global partnership for development. Regrettably, up till now not one of these goals has been reasonably achieved by Nigeria due to inadequate funding. The story, perhaps, would have been better told had the country paid more attention to generating revenue from taxation to fund projects geared towards achieving the Millennium Development Goals (Oluata, & Nwokolo, 2023). It is argued however that a functional and effective tax system will boost revenue generation which in turn, is expected to engender economic development. The effect of tax revenue on economic development can never be overemphasized because to revenue makes fund available with which government invests in developmental projects and reduces poverty as it responds to the needs of citizens by providing basic social services (Ordu, 2021; Obara et al. 2023).

The entire world today is perceived to be a global village due to advancement in information technology (IT). Information technology refers to set of hardware, software, and other information management applications and devices which used in creation, analysis, processing, distribution, storage, retrieval, and transformation of information. It involves the use of computers and associated devices to solve business problems. As a matter of fact, the introduction and adoption of information technology have tremendously changed and

simplified process of doing business thereby making it more efficient and effective. For instance, in the Banking sector, Ayodeji (2014) pointed out that "the increase in emerging Information Technology has made banking services become more arid more automated and less paper work in the past as averred in the Central Bank of Nigeria reports and statistical bulletins (2006, 2007 and 2008) and other literature on banking and finance (Olajeio 2007; Keramati,2007)" Just like in the banking sector, information technology enhances tax revenue generation in the sense that it reduces human error and time required to process information by making data readily available for tax officials.

IT has the capacity to reduce tax avoidance by encouraging voluntary compliance among taxpayers. This has made in manifest in the introduction of Taxpayers Identification Number (TIN). The idea behind the TIN is to be able to identify each taxpayer in Nigeria with a unique computer-generated number. The TIN system is not only an effective means of bringing every taxpayer into the tax net but an avenue to develop a national tax database for the country. The Integrated System of Tax Administration (YEAS), is also an automated system that deals with business process reengineering, systems development, automated finance and accounts functions like tax clearance verification, software for tax refund application, etc. Except for challenges that bother on high costs of installation and maintenance, downtime, cybercrime, etc., information technology is undoubtedly able to increase tax revenue and engender economic development in Nigeria. Ayodeji (2014) further affirmed that ICT plays a very crucial role in the enhancement of Nigeria's internally generated revenue by promoting economic activities that boost productivity. He described ICT as a change agent that has the capacity to accelerate growth and reduce poverty not only in Nigeria but in Africa.

There is growing number of literatures in the last decades on the issue of taxation and economic development. Although they are looked at from different dimension of tax revenue, however the overwhelming conclusion on these studies (Worlu & Nkoro, 2012; Chukwunonso, 2014; Sadiku et al., 2015; Onakoya & Afintinni, 2016, Omitogun & Longe, 2017; Odiambo & Olushola, 2018; Ordu & Nkwoji, 2019: Ordu & Omesi, 2022) is that a significant relationship exists between taxation and economic development using various dimensions of tax and measures of economic development. Again, they focused on different dimensions of tax revenue such as personal income tax and company income tax, but without a moderating effect of Information technology on these relationships, hence creating a gap in variables of which this present study could fill. Furthermore, despite the clamour for taxation in view of the fact that it is a huge source of fund and has the revenue earning capacity to survive, grow, and develop Nigeria's economy, it appears its potential has not been fully harnessed to boost the country's economic strength. So, it has become very imperative to carry out a study on how revenue generated from the taxes that fall within the jurisdiction of the Federal Government in Nigeria impact economic development, taking into consideration the influence of information technology (IT) on this relationship.

Conceptual Framework

The conceptual framework for the study as depicted in the diagram shows that Tax revenue constitutes the independent (Predictor) variable and economic development which is

dependent (criterion) variable and Information Technology serving as the moderator variable. Furthermore, indicators of economic development (treasures) (Real Gross Domestic Product (RGDP) Human development lndex (HDI) are adopted as the variables of analysis while Federal Tex CIT, PPT & TET) Revenue, a die dimensions of Tax revenue for analysis. All of these are moderated by IT in Nigeria. The hypothesized relationship tested is depicted on the diagram below:

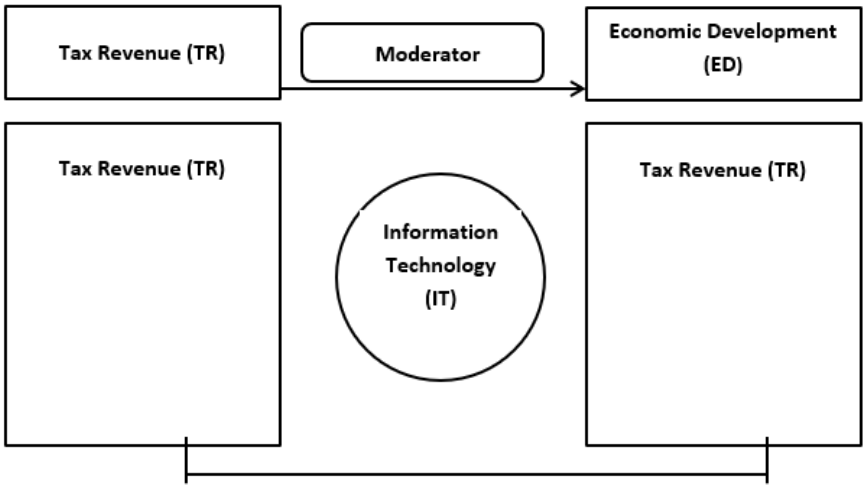

Figure 1: Conceptual Framework
Source: (Ironkwe & Agu, 2019, Ordu & Nkwoji, 2019; Ordu 2021)

Aim and Objectives of the Study

The main aim of the study is to investigate the moderating effect of Information technology on the relationship between tax revenue and economic development in Nigeria within the period of 1990-2021. Another specific objective is as follows

i. Investigate the moderating effect of Information Technology Federal Taxes and RGDP in Nigeria.
ii. Ascertain the moderating effect of Information Technology on Federal Taxes and Human development index in Nigeria.

Research Questions

i. What is the influence of information technology on the relationship between Federal Taxes and RGDP in Nigeria?
ii. What is the influence of Information Technology on the relationship between Federal Taxes and Human development index in Nigeria?

Hypotheses

i. **HO_1:** Information Technology does not significantly moderate the relationship between Federal Taxes and RGDP growth rate of Nigeria.
ii. **HO_2:** Information Technology does not significantly moderate the relationship between Federal Taxes and Human development Index of Nigeria.

Literature Review

Conceptual Review

Federal Tax Revenue

These are revenues from taxes administrated and collected by the federal government. Some of these are company income tax, Petroleum profit tax, Tertiary education tax, customs and excise duties, some Personal income taxes and levies for digital economy (Finance Act 2023).

Tertiary Education Tax- Formally (Education Tax) is a tax imposed on the assessable profits of all companies registered in Nigeria (including companies subject to tax under Petroleum Profits Tax Act) for the enhancement of tertiary education in Nigeria. It is established by the Tertiary Education Trust Fund (Establishment, Etc.) Act No 16, of 2011. This tax is assessed alongside the PPT or income tax liability of a company. Education tax initial assessed at 2% of the assessable profits of a company (but the Finance Act 2023 has increased it to 3%) (Taiwo, 2023). For a company subject to tax under the PPTA, the education tax paid is an allowable deduction under Section 10 of the PPTA in arriving at the adjusted profits of the company for tax purposes. The Federal Inland Revenue Service is charged with the responsibility for the assessment and collection of this tax. The Primary objective of the Education Tax is to achieve restoration, rehabilitation, consolidation and development of tertiary education in Nigeria. It does this however via the Tertiary education trust fund, hence, any avoidance acts on this tax affects the ability to develop human capital in Nigeria via the educational institutions. Company income tax CIT is levied on profits accruing in, derived from, brought into or received in Nigeria. The principal law is the Companies Income Tax Act (CITA). Under the CITA the company income tax is charged at the rate of thirty percent (30%).

Looking at tax rates and its implications various issues are revealed. Take the CIT for instance and how businesses are affected by it in Nigerian economy, Deloitte (2018) posit that small businesses in Nigeria are faced with several issues including multiple taxation from different arms of government, as well as reasonable compliance costs and these issues are exacerbated by the absence of harmonized tax regime in the face of their small cash flows and limited resources (when compared with that of large scale enterprises), of which they employ towards economic growth. Furthermore, acknowledging that there are various incentives available to the SMEs such as FGN intervention fund for Micro scale and medium scale industries (MSME), via Bank of Industry as well as the Central Bank intervention funds, however these incentives are not easily accessible by the SBs.

Equally important is the awareness of the availability of these incentives is poor, unconducive operating environment as well as lack access to funding as a result, they depend in most cases on the limited resources and how-to turnover such for sustainability and remain competitive becomes the challenges that at least limits their performance. With this situation, it becomes imperative for government to look at was of salvaging the small business sector by development a friendlier tax regime that could uplift the contribution of the SB sector. This is where the new tax policy comes to play. According to Deloitte (2018), with the evolution of the new National Tax Policy (NTP) whose objectives is to make the tax system robust and efficient so as to reduce the tax burden on businesses especially the small businesses, however since this is still been proposes, the tax burden on the businesses have remained.

Although the NTP has many lofty proposals such as reduction of corporate tax rates, introduction of tax registration thresholds and these to serve as incentives to ensure that compliance is increased while at the same time protecting the local SMEs, again, until this is passed into law, the small business is saddled with the responsibility of overcoming the tax burden and operate profitability and suitably otherwise they could fizzle out of operation. Furthermore, multiple taxation in the first three years of businesses operation using the commencement rules for assessment usually take place with SBs and this increases the risk of these businesses failing even before reaching maturity stages. Equally important factor that contributes to the poor performance and ultimately failure of small businesses in Nigeria as noted by Dellotte (2018), is the issue of exemption of companies with at least 25% imported equity from minimum tax. This policy it is argued discourages investment and thus makes the risk of business failure high in Nigeria especially for companies that have low profits recorded. The current corporate tax rate for businesses in Nigeria stands at 30% of assessable profit, and this has continued for the past years. With this high rate of tax, business contribution to the GDP has not been encouraging when compared to other nations. In addition, while the tax rate stands at 30%, the SMEs contributed a total of 48.47% of the total GDP of 2018 with revenue of N38.8trillion, consequently when the tax rate is reduced Small business percentage contribution to GDP is likely to increase as they will have more revenue and more profit due to the reduced tax rate (Dellotte, 2018).

It can be deduced that tax rate has a way of affecting the tax revenue generated and utilized for economic development, however the empirical investigation is needed to draw a conclusion on the moderating effect of tax rate on tax revenue generated and economic development of Nigeria. Tax rates are believed to have a significant relationship with tax revenue in nations (Gius, 2018). According to the Laffer Curve, there is a tax rate at which tax revenues are maximized. This curve implies that at low marginal tax rates, tax revenues are an increasing function of tax rates, while at high marginal rates, tax revenues are a decreasing function of tax rates. It is assumed that, at high marginal rates, this inverse relationship occurs because high tax rates may stifle economic activity and reduce the supply of labor (Gius, 2018).

Table 1: Summary of selected taxes and rates for Nigeria

S/No	Taxes	Rates (%)
1.	PPT	85
2.	VAT	7.5
3.	CGT	10
4.	CIT	30
5.	TEDT	3
6.	WHT	10
7.	PIT	24

Source: Compiled by Authors (2023).

Petroleum Profits Tax

Petroleum profit tax (PPT) is a tax applicable to upstream operations in the oil industry. It is particularly related to rents, royalties, margins and profit-sharing elements associated with oil

mining, prospecting and exploration leases. It is the most important tax in Nigeria in terms of iis share of total revenue contributing 95 and 70 percent of foreign exchange earnings and government revenue, respectively (Apere, 2017). Normally this is participation and interest that are taken into consideration whilst determining and assessing Oil and gas companies for PPT and others. The terms of participation for oil and gas corporations are contractual arrangements which stipulate the rights and duties of the parties. According to Omorogbe (2003) the national oil company (NNPC) is the entity that negotiates and enters into such contractual agreements on behalf of the federal government and thus, is charged with the responsibility of giving effect to these contractual agreements. Examples of such contractual arrangements are Joint Ventures (JVs), Production Sharing Contracts, (PSCs) and Service Contracts (SCs). However, the JVs and PSCs are the most common types of contractual arrangements used by upstream petroleum corporations and these two arrangements are liable to tax under the PPTA (Oduntan, 2015).

Under Nigerian petroleum law (NNPC ACT LFN, 2004), JVs are described as any agreement or arrangements under which the NNPC "jointly owns and develops various oil and gas concessions in Nigeria (Deep Offshore and Inland Basin Production sharing contract Act, 1999). In practical terms, the NNPC collaborates with international oil companies (10Cs) to exploit petroleum resources through a joint operating agreement (JOA) which provides a framework for the joint venture relationship. Under a JV arrangement, ownership, funding and production sharing are all based on each JV partner's equity share the parties jointly hold the Oil Mining Lease (OML) and the costs for exploration, development and production of the petroleum (and the hydrocarbons produced) are shared among the parties in proportion to the participating interest held by each party under the JOA (Omoregbe, 2003). Petroleum profit tax involves the charging of tax on the incomes accruing from petroleum operations. The importance of petroleum to the Nigerian economy gave rise to the enactment of a different law regulating the taxation of incomes from petroleum operations. The petroleum profit tax is charged, assessed and payable upon the profits of each accounting period of any company engaged in petroleum operations during any such accounting period, usually one year (January to December). It is charged at 65.75% new companies up to five years and the 85% subsequently. For the purpose of determining this, the profits of a company in relation to the accounting period is the aggregate of (a) the proceeds of sale of all chargeable oil during that period; (b) the value of all chargeable oil disposed of in that period; (c) the value of all chargeable natural gas in that period; and (d) all income of the company of that period incidental to and arising from any one or more of its petroleum operations (i.e. winning or obtaining and transportation of petroleum or chargeable oil in Nigeria by or on behalf of a company, for its own account by any drilling, mining, extracting or other like operations or process, not including refining at a refinery, in course of a business carried on by the company engaged in such operations, and all other operations, incidental there to and any sale of or disposal of chargeable oil by or on behalf of the company. The essence of this tax is wholly to increase the revenue accruable to the Nigerian economy so that development can be fast tracked. Thus, where payment of this tax is affected either through evasion or any other means as a result of non-disclosure of full tax liability, the revenue growth will be affected (Ohaka et al, 2020).

Finance Act 2023

More parting tax changes by the administration have emerged. The former president Mohammad Buhari signed the Finance Bill 2023 into law on 28 May 2023, the eve of his last day in office with an effective day of 1 May, 2023. Below are the top changes.

Table 2: Highlights of Finance Act 2023

1.	Taxation of gains on the disposal of digital assets including crypto currency at the rate of 10%
2.	Deduction of capital losses on assets for capital gains tax purposes, may be carried forward for a maximum of 5 years
3.	Rollover relief on sale of shares is subject to reinvestment of the proceeds within the same year of assessment
4.	Deletion of investment allowance on plant and equipment
5.	Imposition of 0.5% levy on goods imported into Nigeria from outside Africa
6.	All services including telecommunication services are liable to excise, tax at rates to be prescribed by the President
7.	Tax deduction restored for premium paid in respect of insurance on own life and spouse
8.	Sharing of Electronic Money Transfer (EMT) levy 15% to Federal Government, 50% to State Governments and 35% to Local Governments
9.	Application of transfer pricing rules to VAT on transactions between connected persons considered to be artificial or fictitious
10.	Companies appointed to withhold VAT at source are to remit such VAT to the FIRS on or before the 14th day of the following month
11.	VAT on goods purchased via electronic or digital platforms from a nonresident supplier appointed as an agent of the FIRS to be chargeable to VAT and paid by the importer unless the proof of appointment and registration with FIRS is provided.
12.	Redefinition of building for VAT purposes to exclude any structure not permanently affixed to land for all or most of its useful life
13.	Increase in Tertiary Education Tax rate from 2.5% to 3% of assessable profits
14.	Establishment of a Governing Council, Executive Board, and a Management Team for the Ministry of Finance Incorporated
Finance Act 2023 was signed into law on 28 May 2023 but the effective date is stated as 1 May 2023.	

Source (Taiwo Oyedele, PWC, 2023)

Economic Development

Economic development is defined as a policy intervention effort which aims at the economic and social well-being of people (Todero & Smith, 2011). It could be referred to as policy makers' actions which promote the health, political and social well-being of people. In other words, economic development is referred to as an increase in living standards, improvement in self-esteem needs and freedom from oppression as well as a greater choice for the people (Tadaro, 1985) Although GDP is used in measuring economic development, however it is argued that the most accurate method of measuring development is the Human Development Index. IIDI incorporates literacy rates, life expectancy rates as this effect productivity and as well lead to economic growth (Tadero & Smith, 2011). It also leads to the creation of more opportunities in the sectors of education, healthcare, employment and the conservation of the environment. Thus, economic development can be summarized as to have taken place where there is an increase in the standard of living of the citizens, improvement in self-esteem needs and freedom from oppression as well as the citizens having a greater choice available to them (Amadoe, 2018). Common areas of development include literacy rates, life expectancy, unemployment, poverty rate etc. Revenue is needed to fund both growth and development objectives in any

nation. As can be deduced, the increase in revenue in Nigeria as well as increase in expenditure has not translated into the development of its citizens. There has not been increase in the standard of living and the income level of the people indicated in recent reports as earlier stated. Economic developmental pursuits have not been yielding result. The only way economic development can be pursued toward actualization is through effective and efficient drive for revenue generation activities (Obara et al., 2023)

Sustainable Economic Development

More recently, it is advocated globally that countries should move from the concept of economic development to that of "sustainable economic development" (Ordu & Nkwoji, 2019, p6). This is the level of development that can be sustained on the long run. To achieve this however, enormous amount of funding is required, and tax revenue is one of the major ways this enormous amount of funding is generated. Sustainable economic development is critical in these contemporary times and it's been advocated by international bodies such UN, World Bank, IMF and the likes. Sustainable development refers to the ability to adequately take care of present needs without jeopardizing the possibility of meeting the needs of future generations. It is not about growth in gross domestic product (GDP) but it bothers on the impact of government decisions on the livelihood of a people, the environment, the economy, and the well-being of generations to come. This is not to say that suing for economic growth and development is a bad idea. No. It implies that sustainable development brings to bear, the ecological and human dimensions to the development process. It is no doubt that in her approach towards addressing social, economic, and environmental issues, Nigeria has not achieved so much in terms of developmental goals. Instead of outright eradication or reasonable reduction, we have rather witnessed increases in such problems as environmental pollution, poverty, flooding, corruption, ethnicity, and unemployment. These are serious issues that bother on the country's quest for economic development. In a bid to address them and fast track the process of development, Nigeria and other member countries of the United Nations adopted the Millennium Development Goals (MDGs) in 2000, and revising and setting up new targets to meet in 2030.

The United Nations, according to Todaro and Smith (2011), adopted the following set of eight goals that were expected to be achieved by 2015 eradication of extreme poverty and hunger, achievement of universal primary education, promotion of gender equality and empowerment of women; reduction in child mortality improvement in mental health; combating HIV/AIDS, malaria, and oilier diseases: ensuring environmental sustainability, and the development of global partnership for development. Regrettably, up till now not one of these goals has been reasonably achieved by Nigeria due to inadequate funding. The story, perhaps, would have been better told had the country paid more attention to generating revenue from taxation to fund projects geared towards achieving the Millennium Development Goals.

Real Gross Domestic Product (RGDP)

Malizia and Feser (2000) referred to growth and development as complementary because one engenders the other, growth represents an increase in output while development is a structural change. Again, while growth evidences expansion in the economy, development results in the

equitable distribution of income and wealth. So, it is very important for economic growth to manage and endure that for the benefit of the entire populace, wealth should be distributed (UNDP, 2014). When the size of an economy increases between two time periods and that increase is measured by gross domestic product (GDP), the said increase is referred to as economic growth. Gross Domestic Product (GDP) is therefore, the final value of the finished, goods which a country produces within her borders over a given period of time. "It is the monetary value of final output of the goods and services produced within the geographical confines of a country's territory in a given year (Adoghor et al., 2008), and (Okidim & Iuaneh, 2012). The formula below represents the GDP equation which is the sum of private consumption, the expenditures of government, private capital investments, and net exports at market prices in an open economy.

$Y = C + I + G + N_x$; where Y ~ Total Output, C ~ -Consumption, I = Capital Investments, G <= Government Expenditures, and N_x = Net Exports.

However, in the event of changes in general price level in a country over time, the comparison of a particular year's output or GDP with that of another is usually very difficult except by the use of an average price of a base-year. This is to say that for such cross-bother comparison to be possible, Nominal GDP must be adjusted for inflation or deflation. The reason is because the value of Nominal GDP is subject to price changes as it is measured on the basis of monetary value of goods and services produced. The implication here is that the value of GDP will tend to increase during a period-of rising prices and will certainly drop at the time of fall in prices. Given this economic situation portrayed by changes in the value of Nominal GDP due to changes in prices, one cannot affirm as to whether there is a quantity increase or quality improvement in goods and services produced in the economy.

The remedy here is Real Gross Domestic Product (RGDP) which presents a better basis for ascertaining long-term economic performance because it is derived after adjustment is made for price changes. So, GDP adjusted for inflation or deflation is referred to as RGDP. In other words, the result of dividing Gross Domestic Product (GDP) by GDP Deflator is Real Gross Domestic Product (RGDP). The GDP deflator measures the impact which inflation makes on GDP over a period of one year. Therefore, RGDP measures the total value of goods and services produced in an economy over a given period of time using a constant base-year price.

Human Development Index

The human development index (HDI) is a statistical tool that measures the overall achievement of a country in social and economic dimensions based on her citizens' state of health, level of education attainment, and standard of living. The HDI was created to establish and emphasize the fact the ultimate criteria for assessing a country's development should be people and their capabilities, not just economic growth alone. HDI was developed by Indian Nobel prize winner, Amartya Sen, and Pakistani economist. MahbubulHaq, with help from Gustav Ranis of Yale University and Lord Meghnad Desai of the London School of Economics, and was further used to measure a country's development by the United Nations Development Program (UNDP)'s Human Development Report Office. It is a summary composite index introduced as

an alternative to conventional measures of economic development like the GDP and income per capita (Haq-Padda, & Akram, 2011). In other words, the United Nations Development Program (UNDP) in 1990 introduced the Human Development Index (HDI) through its first annual Human Development Report (HDR) thereby transforming the landscape of development theory, measurement and policy (Elizabeth, 2007). Upon the establishment of the HDR, the UNDP succeeded in expanding the availability of measurement as well as creating a tool for comparison to be adopted by governments, non-governmental organizations, scholars and researchers. Thus, HDI becomes one the most reliable indicators of economic development for nations according to United Nations standards. For each dimension of the HDI, it sets minimum and maximum values which are further normalized (expressed as numbers between 0 and 1) to clearly indicate each country's position in relation to values. So according to UNDP (2015), the higher a country's HDI score, the higher its level of human development (and vice versa). The table below shows the fixed values for each indicator of the global HDI in 2014.

Table 3: Minimum and Maximum Values of HDI Indicators

Dimension	Indicator	Minimum	Maximum
Health	Life expectancy (years)	20	85
Education	Expected years of schooling	0	18
	Mean years of schooling	0	15
Standard of living	Gross national income per capita (PPP 2011$)	100	75000

Source: UNDP (2015). Technical Note 1.

Looking at Nigerians position of HDI, according to National Bureau of Statistic, shows that IIDI has hovered around 0.527, 0.530, 0.528, and0.526 in years 2015, 2016, 2017, 2018 and 2019 respectively. It obviously shows a drop in HDI thus indicating that economic development has been falling within those periods.

Information & communication technology (ICT)

Information & communication technology (ICT) is defined as a generic term that covers the acquisition, processing, storage, and dissemination of information. It is the application of computers and communication technology in the task of information handling, information, and information flow from the generation to the utilization levels (Taiwo, 2016). In other words, Information & communication technology is defined as hardware and software products, information system operations and management processes, IT controls frameworks, and the human resources and skills required to develop, use, and control these products and processes to generate the required information. IT is also known as computer software and hardware solutions that provide support of management, operations, and strategists in organizations (Choo & Shahryar, 2013). One thing to note as provided in the various definition of IT is that it is any type of technology for the purpose of communication and involves the use of electronic devices and technology to manipulate information and it is most common amongst firms and not in personal settings. Information & communication technology system includes the like of Enterprise resource systems (ERP), Business intelligence systems, E

commerce systems as well as Information and Technology (ICT) system amongst others (Klovienea & Gimzauskieneb, 2015).

Components of Information & Communication Technology System

According to Taiwo (2016), the detail of components of information system includes the following 1) the hardware component, 2) software component, 3) data, 4) procedures, 5) internet/network, and 6) people. Each of these components has sub components that are incorporated to enable effective implementation of ITS,

i) **Hardware:** This refers to physical, tangible and touchable components. It is the part that can be touched and seen. They can be further classified into 4 groups, which are:

1. Input devices these are hardware devices used to send data into the computer. Examples are light pen, keyboard and mouse.
2. Output devices these are hardware devices through which information is sent out of the computer. They include speakers, printers and monitors.
3. Central Processing Unit (CPU) this is the part of the computer that performs tasks as it comprises of the microprocessor which is the brain of the computer.
4. Storage devices these are hardware components that store data. There are two type- Primary (stores information temporarily) and Secondary (stores information permanently). Examples are RAM and ROM respectively.

ii) **Software:** This consists of the intangible components that can only be seen. They include computer programs and codes that control the hardware devices. A computer program on the other hand, is a set of instructions written to perform a specific task. There are three categories of software, they are System software (which provides the basic functionality of the computer, these are made up of the Operating system and Support system with different diagnostic tools); Application software (which helps the users to perform specific tasks-typical examples includes the web browsers etc); and the Programing software (which are used by software developers to create, debug, maintain and support other programs and software). Typical examples of programming software are JAVA and BASIC.

iii) Data: Data are raw fact and figures that are processed into information. They are generally stored in the electronic devices until they are needed.

iv) Procedures: Are the laid down rules and regulations that govern the way information is processed and exchanged. For example, it can be said that whenever the company needs financial information, it should consult its internal data base-which stores both past and present financial reports as when they are produced and utilized.

v) Internet/Network: The internet is a global system of interconnected computer networks that use the standard internet protocol suite or other network to link several billion devices worldwide. These days, even the mobile devices have been designed to become internet compatible as such there is timely and easy access to information

vi) People: This refers to the man-power that is involved in the steps of IT activities. They probably determine the success or failure of information systems. Consequently, when a company designs it IT system, the man power must be provided with the relevant skills to manage it otherwise, there could be misuse of the developed IT infrastructure and thus purpose for development defeated.

Information Technology (IT)

Information technology (IT) refers to the tools, hardware and software devices as well as other resources that are used to create, manage, communicate, and share information for the purpose of making informed decisions. IT is very useful in decision making because on its own, it can monitor and identify anomalies or disturbances in a system, determine what course of action to be taken, and take the required action to put the situation under control (Obi, 2003). Information technology is transforming businesses and changing the way people work making it more effective and efficient, Information technology enhances tax revenue generation by reducing human error and transactions processing time. It reduces to the barest minimum, the overhead costs of running government ministries charged with the responsibility of administering Laves Secondly, with the aid of an online tax calculator, IT ensures the instant calculation of tax liabilities. Through the cooperation of the federal and states governments. Tax payers Identification Number (TIN), a component of the national tax policy document which former president Goodluck Jonathan launched in April, 2012, was introduced. The TIN which created an electronic data base for tax payers' registration and data storage has increased the country's revenue generation potential by broadening her tax base and revolutionizing her tax administration experience. Today it is easier to maintain a database of taxpayers because the registration of taxpayers and the generation of taxpayer's identification number (TIN) have been simplified by information technology. The fraudulent act of tax officials colluding with taxpayers to negotiate tax liabilities with the aim of enriching themselves and remitting very little to government has been a setback in the Nigeria tax system. But with the introduction and adoption of IT, that corrupt practice tends to be reducing because tax liabilities can now be computed and payments made online. It is the creative tendency to improve business processes which information technology has brought to limelight in the business world and the associated innovative potential that have led to what we now know as electronic taxation (e-taxation). E-taxation simply means the assessment, payment, and collection of taxes through and electronics means. It is the employment of information technology in the process of tax administration. An electronic tax system, according to Wasao (2014), is the online platform that gives a taxpayer the opportunity to access, through the internet, the services which a tax authority offers like registration to obtain TIN, filing of returns online, and application for tax clearance certificate.

In 2015 the Federal Inland Revenue Service (FIRS) introduced information technology to the Nigeria tax system to increase tax revenue, improve tax administration, promptly meet the needs and legitimate demands of taxpayers, and improve compliance by reducing costs associated with compliance. Even though more still needs to be done, reasonable achievements have been recorded. So, information technology plays very critical roles in the revenue generation business of government in Nigeria. Ayodeji (2014) described it as a change agent

that has the capacity to accelerate growth and reduce poverty in Nigeria and the entire African continent Therefore, information technology is a tool in the hand of government to tremendously increase revenue realized from the imposition of taxes and it has the capacity to trigger sustainable economic development in Nigeria.

Empirical Literature Review

Ordu et al (2022) investigated moderating effect of tax rate on the relationship between tax revenue and economic development in Nigeria an empirical analysis. The study investigated the moderating effect of tax rate on the relationship between tax revenue and economic development in Nigeria within the period of 1994-2019. Its specific objective was to ascertain the moderating effect of total tax rate on the relationship between Petroleum profit tax (PPT) and economic development measures of Gross domestic product growth rate and unemployment. Correlational and historical research design was adopted while secondary data was utilized for the study. Data was sourced from Annual Statistical bulletin of Central Bank of Nigeria for various years, federal Inland Revenue service website (FIRS), and Worldbank data bank. Data collected was from the period 1994-2019. Descriptive statistics and trend analysis were used for data analysis while partial correlation and regression was used testing of the hypothesis. The result of the study showed that tax rate strongly and positively moderates the relationship that exists between tax revenue (PPT) and economic development measures of GDP growth rate and unemployment rate within the period of the study. Both for the two measures of economic development studied, a significant moderating influence was revealed to exist between petroleum profit tax and economic development measures used. The study therefore recommended that There should be a review of tax rates including the PPT rate, this can serve as incentives to pay tax regularly and thus increase the chances of increased revenue base from taxation that can be used to pursue economic growth and development objectives, the greatest emphasis of government development objectives (at all levels of government) should be on employment generation, improve of skills set of its citizens, this way unemployment rate could be reduced.

Ordu (2020) investigated the relationship between tax rate reduction and performance of small businesses in Nigeria within the period of 2005-2018. It's specifically investigated the relationship between current tax rate and small business revenue contribution to the GDP of Nigeria as well as that of the relationship between reduced tax rate and small business revenue contribution to the GDP of Nigeria. Explanatory and correlational design was adopted for the study while secondary data was utilized for the study. Data was sourced from Statistical bulletin of Central Bank of Nigeria, National Bureau of Statistics annual reports (various years) and trading economics website. Regression was used for data analysis and testing of the hypothesis. The result of the study showed that a positive and significant relationship exist between tax rate and small businesses revenue contribution to the GDP of Nigeria. Furthermore, even a reduction in tax rate shows significant relationship as well with small businesses revenue contribution to GDP of Nigeria within the period of the study. The study recommended amongst others that there is the need to advocate for reduced tax rate from the current 30% corporation tax to maybe 20% or less at this will enable the Small businesses have more profit that can be used to engage in other productive activities including expansion and creation of

jobs and contribute more to the economy. Furthermore, adequate awareness creation on the incentives available to the small businesses should be created.

Ordu and Nkwoji (2019) study on the impact of education tax on economic development in Nigeria, specifically, it investigated the extent to which tertiary education tax affects Gross Domestic Product and Human development index of Nigeria within the period of 2006-2017. Data were gathered from Federal Inland revenue service (FIRS) planning, reporting and statistic department report for various years, Central bank of Nigeria Annual Statistical Bulletin and annual Reports and United Nations development program (UNDP) Annual Reports. Regression analysis and thematic analysis were employed for the analysis of the data. The study showed that education tax revenue has a significant impact on economic development and thus indicates that education tax revenue is crucial aspect of government funding needed for economic developmental purposes Education tax has a positive and strong relationship with economic development when measured on the GDP as well as HDL The study concluded by implying that Nigeria's economic development pursuit has not been adequate as it has witnessed low to medium level of development within the period examined in the face of tax revenue generated. Thus, there is need to advocate for increase in tax revenue generation and judicious use of tax revenue in order to foster economic development.

Okonkwo and Chukwu (2019) in their study within the Nigerian context investigated tax revenue und economic development in Nigeria within the period of 1998-2017. The study proposed that the federal government tax revenue has not significantly influenced economic development in Nigeria. The proxies of the study were PPT, CIT, EDT and total tax revenue (ITR) and HDI. Data were sourced from the Central Bank of Nigeria Statistical Bulletin, United Nations Development Programme and Federal Inland Revenue Services- 1998-2017. Vector Autoregressive Estimates was used in estimating the model. The study results indicated that tax revenue has insignificant effect on human development index in Nigeria. Thus, the study recommends among others that government should improve on its tax collection rate and increase its spending on education and infrastructure in order to broaden the tax base, tax revenue should be transparently and judiciously utilized for investment and in the provision of infrastructure and public goods and services so as to accelerate economic development; and government should ensure transparent and wholesome prosecution of tax offenders.

Alade (2018), investigated how the adoption of Information and Communication Technology (ICT) affected revenue collection in Kenya. They analyzed data collected for the study using regression analysis and found that the use of Information and Communication Technology actually increased revenue collection in Kenya. Owino et al (2017) also examined the influence of ICT on revenue collection in county governments in Kenya with the use of percentages, means and regression techniques for data analysis. The results revealed a strong and almost perfect association between the ICT systems adopted in County Governments and revenue collection, and that the application of the ICT systems improved the efficiency of revenue collection in the county governments.

Theoretical Framework

Benefit Received Theory

This theory dictates that the state should levy taxes on individuals according to the benefit they derived from government expenditure. The more benefits a person derives from the activities of the state, the more he should pay tax to the government. In other words, this theory proceeds on the assumption that there is basically an exchange or contractual relationship between a tax payer and the state. The benefits theory would imply that a resident should be able to collect personal tax benefits to the extent that her tax payments to the source state exceed the money value of any source state government benefits she already receives, including infrastructure, regulated labour and capital markets, and so on (Otu & Adejumo, 2013). According to Musgrave and Musgrave (1973), the benefit approach or theory was initially developed by Knut Wicksell in 1896 and Erik Lindahl in 1919, two economists of the Stockholm School, Sweden, and has then been applied and furthered by several scholars including the likes of Richard Musgrave and Peggy Musgrave. As at contemporary times, the benefits received theory is found in almost all writings regarding the issues of taxation and its benefits to not just the individual but to society at large (Bassey. 2013). Furthermore, as Otu and Adejumo (2013) observed, although the benefit received theory is intuitively attractive, there are several draw backs it has which includes; It would be impossible to implement precisely due to the difficulty of determining the amount of government benefits, including diffuse benefits such as military protection received by each resident and nonresident taxpayer, it does not accord with modern understandings of income taxation. In a purely domestic context, states generally do not condition government benefits upon recipients' payment of taxes. Indeed, taxpayers receiving the largest government benefits may be those who, due to their needy circumstances, pay the least taxes, if state maintains a certain connection between the benefits conferred and the benefits derived. It will be against the basic principle of the tax (There is no direct quid pro quo in the case of a tax) (something for something) because there is not direct proportion of which tax is based, most of the expenditure incurred by the state is for the general benefit of its citizens, it is not possible to estimate the benefit enjoyed by a particular individual every year. If we apply this principle in practice, then the poor will have to pay the heaviest taxes, because they benefit more from the services of the state. And if we get more from the poor by way of taxes, it is against the principle of justice. Regardless of its criticisms, this theory has stood the test of time and its applicable in this context of Nigeria and justified for use in this study in the sense that if the state levy taxes on individuals according to the benefit conferred on them, it will become easier to pay tax as the more benefits a person or groups of persons derived from the activities of government the more they will be willing to pay their taxes in accordance with the provisions made by government to them. Consequently, this study adopts the benefit received theory of taxation as its framework for analysis.

Methodology

This study employed the ex-post facto research design. Ex post facto research design is basically concerned with how to perform impact analysis on already existing data. It is relevant for this study since it was used to find out if one or more already existing conditions could have possibly caused subsequent differences in groups of subjects. Time series data from Federal Inland Revenue Service, Central Bank of Nigeria's Statistical Bulletin, and National Bureau of

Statistics covering a 32-year period (1990-2021) were gathered and analyzed to achieve the objectives of the study, partial correlation and regression was used testing of the hypothesis. The population convers 63 years' period (from 1960-2019) that is looking at when Nigerian gained independence up to year 2023. Hence, purposively, data of the last 32-year period for both tax revenue and economic development were chosen for this study. The periods are from 1990-2021. The period of 32 years served as the sample size.

Model Specification

In line with the hypotheses earlier stated in at introduction, regression models were formulated as shown in the following implicit equations:

RGDP = f(FT, IT) ----------(1)

HDI = f(FT, IT) ……(2)

RGDP = $a_0+a_1FT + a_2IT + u$ … (3)

HDI = $b_0+b_1FT+b_2IT + u$ …. (4)

Where:

For RGDP

a_0 is the intercept

a_1 is the slope of Federal Tax (FT)

a_2 is the slope of Information Technology (IT)

u is the stochastic term

for HDI:

b_0 is the intercept

b_1 is the slope of FT

b_2 is the slope of IT

u is the stochastic term

Using Statistical Package for Social Sciences (SPSS) software, the variables were subjected to complementary statistical test and the results will be used for analysis and for hypothesis verification.

Results and Analysis

Table 4: Descriptive Statistics en all Variables of the Study

Statistics	Information	Tertiary Education Tax	Real Domestic Product	Petroleum Profit Tax	Company Income Tax	Human Development Index
N	32	32	32	32	32	32
Valid						
Missing	0	4	0	0	0	0
Mean	2990.9131	S 5.9641	39473.3210	1305.1895	382.3115	.4636
Sid. Deviation	3053.24410	76.58891	19018.585	1326.308	434.71978	.04833
Minimum	214.36	7.53	19199.06	26.91	3.00	31
Maximum	8527.66	281.00	69810.02	4365.40	1207.30	.53
Sum	86736.48	2149.10	1144726.31	37850.49	11087.03	13.44

The descriptive statistics in table 4 above indicates that Tertiary Education Tax (TET) had an average of N 85.9 billion and a standard deviation of N 76.6 billion even though the average of Real Gross Domestic Product (RGDP) stood at N 39.5 trillion with a standard deviation of 19.0 trillion within the period of the study. Petroleum Profit Tax (FPT) had an average of about 13 trillion with a standard deviation of about N 1.3 trillion as well. Also, the average of Companies Income Tax (CIT) was about 3382.3 billion with a standard deviation of 434.7 billion. In the same vein, the average of Information Technology (IT) was about 3 trillion and its standard deviation was about 43.5 trillion.

Test of Hypotheses

$H_0$1: Information Technology does not significantly influence the relationship between Federal Tax and Real GDP in Nigeria.

Table 5: Partial Correlation Analysis showing the Influence of Information Technology on the Relationship between Tax Revenue and Real Gross Domestic Product

Control Variables Statistics	Variables	Real Gross Domestic Product	Information Technology	Tax Revenue
-none- [a]Tax revenue	Correlation	1.000	.934	.913
Significance (2-tailed)			.000	.000
df		0	30	30
Real Gross Domestic Product	Correlation	.934	1.000	.989
Significance (2-tailed)		.000		.000
df		30	0	30
Information Technology	Correlation	.913	.989	1.000
Significance (2-tailed)		.000	.000	
df		30	30	0
Information Tax Revenue	Correlation	1.000	.521.005	
Correlation Technology Significance (2-tailed)				
df		0	30	
Information Technology	Correlation	.521	1.000	
Significance (2-tailed)		.005		
df		30	0	

[i>] Cylls contain zero-order (Pearson) correlations.

Table 5 reveals a Pearson's correlation coefficient of 0.934 (r = 0.934) which is very high denoting a very strong relationship between Federal Tax revenue Real Gross Domestic Product. The correlation coefficient of 0.934 has a positive sign-that represents a direct relationship between Federal Tax reverse and Real Gross Domestic Product thereby implying that any increase in the value of Federal Tax revenue will certainly lead to increase in Real Gross Domestic Product Table abo shows a probability/significant value of .000 (PV = 0) that is less than 0.05 (PV < 0,05), meaning that the relationship between Federal and Real Gross Domestic Product is significant at 0.05 level of significance.

Another Pearson's correlation coefficient of 0.913 (r = 0.913) is shown in table 5. This correlation coefficient is very high and positive, indicating that and direct relationship exists between Information Technology and Federal Tax revenue. The implication of the direct relationship is that an improvement in Information Technology will lead to increase in Tax

revenue. Table 5 also presents a probability/significant value of .000 (PV + 0) which is less than 0.05, implying that the relationship between Information Technology Federal Tax revenue is significant at 0.05 level of significance. Yet another Pearson's correlation coefficient of 0.989 (r = 0.989) is shown in table 5 This correlation coefficient is not only very high but positive, strong and direct relationship between Information Technology and Real Gross Domestic Product. However, the direct relationship suggests that whatever improvement is achieved in Information Technology will bring about an associated increase in Real Gross Domestic Product. The table also shows a probability/significant value of .000 (PV = .000) which is less than 0.05 and indicative of the fact that the relationship between Information Technology and Real Gross Domestic Product is "significant at 0.05 level of significance.

Table 5 further reveals a Controlled Partial Correlation of 0.521 (CPC = 0.521) and a Zero Order Partial Correlation of 0.934 (ZPC = 0.934). The difference between the Zero Order Partial Correlation (ZPC) and the Controlled Partial Correlation is 0.413 (0.934-0.521-0.413) and it is greater than 0.01 (0.413 > 0.01). This implies that Information Technology influences the relationship between Federal Tax revenue and Real Gross Domestic Product. Furthermore, the positive value of the difference between Zero Order Partial Correlation and the Controlled Partial Correlation (0.413) indicates that Information Technology asserts a positive but insignificant influence on the relationship between Tax revenue and Real Gross Domestic Product.

H01: Information Technology does not significantly influence the relationship between Tax revenue and Economic Development in Nigeria.

Table 6: Partial Correlation Analysis showing the Influence of Information Technology on the Relationship between Tax revenue and Human Development Index

Control Variables Statistics	**Variables**	**Real Gross Domestic Revenue**	**Information Technology**	**Tax**
-none- [a]Tax revenue	Correlation	1.000	.847	.913
Significance (2-tailed)			.000	.000
df		0	27	27
Real Gross Domestic Product	Correlation	.837	1.000	.866
Significance (2-tailed)		.000		.000
df		27	0	27
Information Technology	Correlation	.913	.866	1.000
Significance (2-tailed)		.000	.000	
df		27	27	0
Information Tax Revenue	Correlation	1.000	.228.244	
Correlation Technology Significance (2-tailed)				
df		0	*2b*	
Information Technology	Correlation	.228	1.000	
Significance (2-tailed)		.244		
df		26	0	

Cells contain zero-order (Pearson) correlations.

However, table 6 shows a Pearson's correlation coefficient of 0.837 (r = 0837), which is very high, representing a very strong relationship between Federal Tax revenue and Human

Development Index. The correlation coefficient of 0.837 has a positive sign that signifies a direct relationship between Federal Tax revenue and Human Development Index thereby implying that any increase in the value of Federal Tax revenue will certainly lead to increase in Human Development Index. Table 6 also shows a probability/significant value of .000 (PV = .000) that is less than 0.05 (PV <0.05), meaning that the relationship between Federal Tax revenue and Human Development Index is significant at 0.05 level of significance. Table 3 also shows another Pearson's correlation coefficient of 0.913 (r=0.913) which is very high and positive, indicating that a strong and direct relationship exists between Information Technology and Federal Tax revenue. The implication of the direct relationship is that an improvement in Information Technology will lead to increase in Federal Tax revenue. That table also presents a probability significant value of 000 (PV = .000) which is less than 0.05, implying that the relationship between Information Technology and Federal Tax revenue is significant at 0.05 level of significance.

Yet another Pearson's correlation coefficient of 0.866 (r = 0.866) is shown in table 6. This correlation coefficient is not only very high but positive, revealing a strong and direct relationship between Information Technology and Human Development Index. However, the direct relationship suggests that whatever improvement is achieved in Information Technology will bring about an associated increase in Human Development Index. The table also shows a probability/significant value of .000 (r = .000) which is less than 0.05 and indicative of the fact that the relationship between Information Technology and Human Development Index is significant at 0.05 level of significance.

Table 6 further reveals a Controlled Partial Correlation of 0.228 (CPO 0.228) and a Zero Order Partial Correlation of 0.837(ZPC = 0.837). The difference between the Zero Order Partial Correlation (ZPC) and the Controlled Partial Correlation is 0.413 (0.837-0.228-0.609) and it is greater than 0.01 (0.609% > 0.01). This is to say that Information Technology actually influences the relationship between Tax revenue and Human Development Index. Furthermore, the positive value of the difference between Zero Order Partial Correlation and the Controlled Partial Correlation (0.609) indicates that Information Technology asserts a positive but insignificant influence on the relationship between Tax revenue and Human Development Index.

Summary and Discussion of Findings

Influence of Information Technology on the Relationship between Federal Tax revenue and Real Gross Domestic Product

From the result obtained, Information Technology truly moderates the relationship between Tax revenue and Real Gross Domestic Product at it asserts a positive but insignificant influence on the relationship (see table 6 for ZPC-CPC-0.413). In addition, Information Technology, no doubt, moderates the relationship between Tax revenue and Human Development Index such that it impacts positively and significantly on the said relationship (see table 6 where ZPC CPC-0.609). However, the positive value of the difference between Zero Order Partial Correlation and the Controlled Partial Correlation (0.413) indicates that Information Technology asserts a positive but insignificant influence on the relationship between Federal Tax revenue and Real

Gross Domestic Product. This is in line with the finding of Alade (2018) that e-taxation has positive but insignificant effect on revenue generation in Nigeria. This is coming from a study aimed at investigating how the adoption of electronic taxation could affect revenue generation in Nigeria using paired sample t-test. Furthermore, information technology has contributed to increase in taxes collected by the Federal Government of Nigeria. Our finding in this regard agrees with the position Owino et al (2017) that the application of the ICT systems improved the efficiency of revenue collection in the county governments of Kenya.

The introduction and adoption of information technology by tax administrators in Nigeria have made excellent impact on tax collection and enhanced revenue generation by reducing human error in transactions processing. The deployment of Information technology into Nigeria's tax administrative machinery has made the maintenance of taxpayers' database easier through the Taxpayers Identification Number (TIN). However, the Nigeria Customs Service generated its highest revenue ever in 2017 due to the deployment of digital identification technique that made it possible for Customs officers to use Vehicle Identification Number (VIN) to identify vehicles. The feat in revenue generation recorded by the Nigeria Customs Service in 2017 was also due to the fact that appropriate duties were requested and collected from vessels located on Nigeria waters because data on them were made available by a digital platform engendered by technology.

Influence of Information Technology on the Relationship between Federal Tax revenue and Human Development Index

Table 6 reveals a Controlled Partial Correlation of 0.228 (CPC = 0.228) and a Zero Order Partial Correlation of 0.837 (ZPC = 0.837). The difference between the Zero. Order Partial Correlation (ZPC) and the Controlled Partial Correlation is 0.609 (0.837-0.228 = 0.609) and it is greater than 0.01 (0.609 > 0.01), implying that Information Technology actually moderates the relationship between Federal Tax revenue and Human Development Index. This is in line with the result of Githinji et al (2014), cited by Alade (2018), that the use of Information and Communication Technology actually increased revenue collection in Kenya. The result is obtained from a study they conducted to investigate how the adoption of Information and Communication Technology (ICT) affected revenue collection in Kenya, using regression analysis. Furthermore, the positive value of the difference between Zero Order Partial Correlation and the Controlled Partial Correlation (0.609) indicates that Information Technology asserts a positive but insignificant influence on the relationship between Tax revenue and Human Development Index. This is to say that the adoption of information technology enhanced total revenue realized from sax revenue but the impact is yet to meet expectation. The foregoing assertion is not in consonance with the opinion of Chijioke et al (2018) who posited that electronic taxation implementation in Nigeria had not truly enhanced tax revenue, federally collected revenue and tax-to-GDP ratio in the country, haven investigated how the implementation of electronic taxation in Nigeria could affect tax revenue, federally collected revenue and Tax-to-GDP ratio.

Conclusion and Recommendations

It has also been found in this study that Information Technology (IT) makes a positive interference in the relationship between tax revenues accruing to the Federal Government and

Nigeria's economic development. In other words, the use of IT and associated devices is proved to have propelled and facilitated tax administration in Nigeria and indeed, promoted her economic development. Thus, it is recommended that Information Technology should be fully deployed towards tax administration (collection and assessment) as well as tax audit and investigation. In addition, state governments should be encouraged to adopt the same measures (use of Technology for tax administration and assessment) in order to enhance tax revenue generation for economic development activities within their domain.

References

Adoghor, G. J., Onachukwu, O., & Ewubare, D. B. (2008). *Principles of economics: A contemporary approach.* Pearl Publishers

Amador, K. (2018, January 16). What is the GDP growth rate? Why it's important, how to calculate it. https://www.thebalance.com/what-is-the-gap-growth-rate-3306016 on 7/3/2018

Apere, T. O. (2017). Impact of crude oil on Nigeria's fiscal policy formulation. *European Journal of Research in Social Sciences, 5*(3),74-83. Academic publishing, UK, www.idpublications.og

Amos, O. A. & Uniamikogbo, E. (2018). Effect of tax revenue on economic development of Nigeria. Online at hilpii://www.researchgate.net/publication/3223671'K) Hfi'ecl_of_Tax Revenue on Economic Development of Nigeriadocx_Nev/

Ayodeji, O. E. (2014). Impact of ICT on tax administration in Nigeria, *Computer Engineering and Intelligent Systems, 5*(8), 26-29,

Bassey, O U. (2013). *Personal income tax in Nigeria,* CIBN Press.

Buchanan, J. M. (1986) The constitution of economic policy V. *American Economic Review, 77*(3),241-250.

Central Bank of Nigeria Annual Reports and Statement of Accounts (Several Years).

Choo, W., & Shahryar, S. (2013) Mini literature analysis on information & communication technology definition, *Information and Knowledge Management, 3*(2). http://www.liste.org/Journals/index.php/1KM/anicle/viewFile/4287/4355.

Chukwunonso, G. I. (2014). Impact of social spending on human development in Sub-Saharan Africa, *American Journal of Social Sciences, 2*(2)29-35. *http://www.openscienceonline.com/Journal/ajss.*

Dellotse, E. (2018, January, 25). Nigeria: Tax policy on SMES in Nigeria http://www.mondaq.com/article.asp?article_id-667066xignup true how fair?

Eneojo, S. S. & Gabriel, T. (2014). Taxation and revenue generation. An empirical investigation of selected states in Nigeria. Journal of Poverty. Investment and Development, 4, 102-115.

Gius, M. (2018). The relationship between tax rates and tax revenue, *Atlantic Economic Journal, 46*(1),137-138

Haq-Padda, I. & Akram, N. (2011). The impact of tax policies on economic growth: Evidence from Asian economies*, Accounting and Business Research, 61*(1 1), 230-255,

Ironkwe, U. L., & Ordu, P. A. (2016). The impact of tax incentives on economic development in Nigeria (Evidence of 2004-2014), *International Journal of Economics, Commerce and Management, 3*(4), 686-737.United Kingdom.

Ironkwe, U. I., & Agu, E. O. (2019). Tax revenue and economic development in Nigeria, *International Journal of Advanced Academic Research Economic Evaluation, 5*(4), 1-15.

Kalagbor, G. K., & Ordu, P. A. (2019). The effect of public revenue and public expenditure realization of macroeconomic objectives of government of Nigeria: Evidence of 2015-2017, *International Journal of Innovative Finance and Economics Research, 7*(3),1-13. www.scahipaj.org

Klovienė, L., & Gimzauskiene, E. (2015). The effect of information technology on accounting system's conformity with business environment: A case study in banking sector company. *Procedia Economics and Finance, 32*, 1707-1712.

Knut, W., & Lindahl, E. (1967). The theory of public goods, *The Scandinavian Journal of Economics, 105*(4), 527-553

Malizia, E. E. & Feser, J. E. (2000). *Understanding local economic development,* Rutgers: Center for Urban Policy Research.

Musgrave, R. A., & Musgrave, P. B, (1973). *Public finance in theory and practice.* McGraw Hill.

Obara, L. C., Ordu, P. A, & Obara, F. O. (2022). Treasury single account (TSA) and economic development in Nigeria: Accounting & ethical issues, *International Journal of Innovation and Economics Development, 7*(6), 46-67, February.

Obi, J. (2003). *Educational management:* Theory and practice, JAMOE Nigeria enterprises, Enugu.

Odiambo, O. & Olushoola, O. (2018) Taxation and economic growth in a resource-rich country: The case of Nigeria. *Intech Open 62-83* http//dx.doi.org/10.57725intechopen 74381.

Oduntan, M. O. (2015). *The role natation in Nigeria soil and gas sector reforms-learning from the Canadian experience,* (Master's Thesis at College of Graduate Studies and Research College of Law). University of Saskatchewan, Saskatoon, Canada.

Ofoegbu, G. N., Akwa, D.O. & Oliver. O. (2016). Empirical analysis of effect of tax revenue on economic development of Nigeria. *International Journal of Asian Social Science, 6*(10), 604-613.

Ohaka, J. Ordu, P. A. & Obi, H. I. (2020). An evaluation of tax leakages in Use Nigerian tax system. Paper presented at 1st International Academic conference, *Organizational Repositioning Environmental Transformation and Post Oil Economy of Nigeria.* The place of Technology and innovation, Book of Proceedings (pp 31-411. 28th October, Port Harcourt, Nigeria: Faculty of management Sciences, Rivers State University, Port Harcourt.

Okidim, I. A., & Tuaneh, G. L. (2012) Econometric analysis of the effectiveness of fiscal policy in economic growth and stability in Nigeria (1985-2003), *Journal of Economics and Sustainable Development 3*(9), 62-67.

Okonkwo, I. V., & Chukwu, K. O. (2019) Government tax revenue and economic development in Nigeria: 1996-2017. *International Journal of Research in Business, Economics and Management 3*(3), 91-105.

Oluata, O. & Nwokolo, I. (2023;). Nigeria: Nigeria business environment and foreign direct investments-overview of tax and regulatory considerations. *Andersen in Nigeria.* Online at https://www.mondaq.com/nigeria'tax-authorities/1301106/nigeria-business-environment-and-forciga-devct-investments-overview-of-tax-and-regulatory considerations.

Omesi, L, & Ordu, P. A. (2022) Value added tax (VAT) and revenue allocation in Nigeria. A paper submitted at ANAN, UNIZIK conference.

Omorogbe, V. (2003). *Oil and gas lave in Nigeria Malthouse*, Publishers,

Omotigun, O., & Longe, A. E. (2017). Unemployment and economic growth in Nigeria in the 21st century. VAR Approach. *ACTA UNIVERSITATIS DANUBIUS, 13*(5), 155-168. http://journals.univ-danubiux.ro/index.php/oeconomica/article/viewFile/4064/4256

Onakoya, A. B., & Afintini, O. I. (2016). Economic growth of Nigeria, *Asian Journal of Economic Modeling, 4*(4), 199-210.

Ordu, P. A. (2020). *Tax rate redaction and business performance of small businesses in Nigeria,* Unpublished article, Ignatius Ajura University of Education

Ordu, P. A. (2021). *Tax revenue and economic development in Nigeria* (1994-2019). (PhD Thesis). Ignatius Ajuru University of Education, Port Harcourt, Nigeria.

Ordu, P. A., & Niwoji, N. O. (2019) Impact of education tax on economic development in Nigeria. *International Journal of Innovative Development and Policy Studies, 7*(3), 1-17. www.scahipaj.org.

Ordu, P. A & Omesi, I. (2020) Capital gains tax and economic development in Nigeria: An empirical analysis. Journal o*f Finance, Governance and Strategic Studies, 3*(2), December 31-57

Ordu, P. A., Nkwoji. N. O., & Ogonda, G. O. (2022). Moderating effect of tax rate on the relationship between tax revenue and economic development in Nigeria: An empirical analysis. Paper presented at the 1st Association of Management and Social Sciences Researchers of Nigeria (AMSSRN) Port Harcourt Zonal conference on Developing Nigeria's clean energy sources for sustainable economic development: *The imperative of research in curbing the menace of black soot in the Niger Delta region, book of abstracts (32-33), June 7th - 9th, Ignatius Ajuru University of Education, Port Harcourt*.

Otu, H. B., & Adejumo, T. O. (2013). The effects of tax revenue on economic growth in Nigeria (1970-2011). *International Journal of Humanities and Social Science Invention 6(2), 16-20 www.ijhssi.org.*

Owino, H. O, Otieno, S. & Qdoyo, F. S. (2017). Influence of information and communication technology on revenue collection in county governments in Kenya. A comparative study of Migori and Homa Bay county governments. *International Journal of Recent Research in Commerce Economics and Management. (URRCEM), 4*(1), 66-96

Petroleum ACT, LEN 2004

Sadiku, M., Ibraimi, A., & Sadiku, L. (2015). Econometric estimation of the relationship between unemployment rate and economic growth of FYR of Macedonia. *Procedia Economics and Finance 19,*69-81.

Taiwo, F. H. & Adejare, A. T. (2016). The assessment of the impact of capital gains tax on economic growth in Nigeria, *International Journal in Management and Social Science, 8*(4), 161-169

Taiwo, J. N. (2016). Effect of ICT on accounting information system and organizational performance: The application of information and communication technology on accounting information system, *European Journal of Business and Social Sciences, 5*(2), 1-15.

Taiwo, O. (2023). *Nigerian finance act 2023*, PWC Online at https//www.pwc.com/ag/en/publications.

Tax Justice Network (TJN) (2012). *Aid, tax and finance for developmen*t.www.tjn.org

Todaro, M. P. (1985). *Economic development in the third world Longman Publishers.*

Todaro, M. P., & Smith, S. C. (2011). *Economic development.* (11th edn), Pearson's education, and Addisson-Wesley publishers.

United Nations Development Program (UNDP) (2015). *Human development report,* Available from http://hdr.undp.org/sites/all/themes/halr_theme/country-notes/NGA.pdf

Worlu, C. N., & Nkoro, E. (2012). Tax revenue and economic development in Nigeria: A macro econometric approach, *Academic Journal of Interdisciplinary Studies, 1*(2), 211-223.