Testing the Causal Nexus Between Tax Revenue and Human Development in Nigeria

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Abstract	**Original Research Article**

We examined the effect of tax revenue on human development in Nigeria in this study. To carry out this study, we use Companies' income tax, petroleum profit tax, value added tax, and customs and excise duties tax revenue on per capita income for the period 1990 to 2021. Ex-post facto research design was employed for the study. Secondary data from the Central Bank of Nigeria (CBN) statistical bulletin, Federal Inland Revenue Service (FIRS) reports and the World Banks database was used. Several statistical and econometric techniques were applied to analyze the data. Findings from the study revealed that tax revenue in the long and short run had an insignificant effect on human development (proxied with per capita income) in Nigeria. Based on the findings, it was recommended that government should invest tax revenue on the health system in form of providing adequate health infrastructures, provision of relevant and specialized manpower in the health sector, and provide adequate sensitization on healthy lifestyles that would promote increased life expectancy in Nigeria. Lastly, government should invest tax revenue in creating awareness on the benefits of early child enrolments in schools, provide adequate incentives to motivate teachers to deliver on the job and build conducive learning environments that will encourage students to engage in learning.

Keywords: Tax Revenue, Human Development, Companies income tax, Petroleum Profit Tax, Value Added Tax.

1. INTRODUCTION

Life expectancy, educational attainment and per capita income are three of the commonly used variables in measuring the level of human development in the world. Presently, Nigeria ranks among the Low Human Development category. According to UNDP (2018) Statistical reports, life expectancy for Nigeria in 2016 was 53.4 years, expected year of schooling was 10.0 years, mean years of schooling was 6.2 years and GNI per capita was $5,326. In the successive year, life expectancy was 53.9 years, expected years of schooling was 10.0 years, mean years of schooling was 6.2 years and GNI per capita was $5,231. These statistics are not looking good relative to the potentials and natural endowments of the country, with an urgent need to catch up with the rest of the developed world. Getting Nigeria out of this position should be a task that should be brought to the front burner. Anyaduba and Aronnwan (2015) observed that in Africa, evidence abounds as to the deficiency in infrastructure and this has inhibited growth and development in the continent. Most African countries lag behind other developed countries. In addition, the United Nations (2010) asserts that 884 million people lack access to potable water and 2.6 billion people lack access to basic sanitation services.

Soseco (2016) opined that human development is one of the indicators in measuring success in development. Development can be achieved through education, health, knowledge, information technology and work situation. The work situation is key, according to the researcher because it not only increases human capital but also can increase nation's competitiveness through firms existing in such organization. Also, people with high human development, have good health and high standard education and are more resilient than those who are malnourished, without education and thus in a weaker position to change their activity or location in reaction to adverse shocks. Ellawule (2018) opined that measuring a country's economic development has gone beyond the country's Gross Domestic Product (GDP) or Gross National Product (GNP), which only measures economic growth. The measurement of the level of human development through the use of Gross National Product (GNP) for different countries was first criticized by the pioneer United Nation Report of 1954 in which recommendations against the standard of living was

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made. Human Development Index was developed in 1990 as part of UNDP. This study therefore adopts this approach to measuring standard of living with the use of this index rather than economic growth, was for ease of comparison, transparent device for measuring human development progress and to attract the attention of policy makers. There are three major dimensions of human development, namely, knowledge, longevity and access to resources.

Ayuba (2014) opined that taxation is a veritable tool that mobilizes a nation's internal resources and creates enabling environment to grow the economy. When taxes are efficiently and effectively administered, there will be increased revenue generation and the citizens will expect deployment of such revenue to provide amenities that enhance standard of living through the provision of qualitative housing, medical facilities and services, efficient transportation system, sufficient and reliable power, good education, good infrastructures for business and social development, etc. However, unqualified tax personnel and fraudulent activities of tax collectors pose great challenges to revenue generation as fraudulent tax collectors forge and divert government revenue into personal pockets. Also, the inability of government to reciprocate the sacrifice of tax payment has induced tax payers to explore the loopholes in tax laws to avoid and evade tax payment, hence the continuous reduction in tax revenue generation. Therefore, the aim of every activity of government is targeted towards the development of the citizens and improvement of their standard of living, and the more funds the government has at its disposal, the easier for it to effectively create the enabling environment for the betterment of the life of the citizens.

Nigeria has been lagging behind other nations of the world in terms of human development. According to a report published by The Brookings (2018), Nigeria is the world capital for poverty, meaning there are more poor people in Nigeria than anywhere else. This report gives the government huge concerns and there should be concerted efforts put in place to lift the country out of this debased position in the shortest possible time. To get the country out of this negative situation, the government will have to begin to take appropriate steps that will develop the standard of living of the citizens. According to UNDP report (2018) Nigeria was ranked as 157 out of 189 countries listed out on the Human Development Index (HDI) ranking. This puts the country in the low human development category. In the same report, it was stated that when the value of HDI, put at 0.532 is discounted, it drops to 0.347 due to inequality in the distribution of the HDI dimension indices. Okeke, Mbonu and Ndubuisi (2018) also stated that the high cost of education and inadequate investment in infrastructure has made Nigeria to be ranked 158 in 2017 in the human development and infrastructure index, with value of 0.451 among 187 countries which places her in the bottom of the table. This implies that Nigeria is below the Sub-regions level of human development index which is worrisome. The decay of Nigeria's educational system, coupled with the high cost of schooling and low returns, and the absence of competition in most essential infrastructural institutions, like roads, electricity, sea ports and air ports have put Nigeria on this low scale. The inadequate investment in critical infrastructure, poor investment in education and healthcare facilities and low-income capacity, have greatly contributed to the low HDI in Nigeria.

Solving this human development problem in Nigeria requires a well-structured programme of investment in infrastructure related to the provision of good quality of life. Infrastructures that would improve health, education and economic empowerment of the citizens are required in Nigeria (Kharas, Hamel & Hofer, 2018). The inability of the government to improve the standard of living of Nigerians have been traced to the unavailability of funds to finance these developmental needs. The overdependence of the government on oil revenue has left the revenue profile of the country vulnerable to the fluctuations of oil prices in the international market (Vaggi, 2017). This development has been responsible for the inability of the government to provide infrastructures needed to improve the standard of living in Nigeria. It is against this backdrop that the need for government to look at the potential of harnessing tax revenue as a sustainable means of funding the infrastructural needs of the country so as to improve the standard of living of the citizenry.

Also, many of the empirical studies reviewed dealt largely on effect of tax revenue on economic growth and few works related tax revenue to human development. Even the ones that touched on Human Development Index as a proxy for economic growth, their focus was on HDI as a whole and not the individual components which make up the HDI itself, namely life expectancy at birth, expected years of schooling and GNI per capital. This implies that this study intends to fill the gap of the paucity of literature examining the effect of the tax revenue on human development with particular focus on the GNI per capita. Also, majority of the works reviewed did not consider Value added tax and Customs Duty as proxies for tax revenue, whereas this work sets to fill the gap by using Companies' income tax, Petroleum profit tax, Customs and excise duties and Value added tax as measures of tax revenue.

1.1 Objective of the study
1.2 The specific objectives are to:
   i)   Determine the effect of companies' income tax on per capita income in Nigeria;
   ii)   Examine the influence of value added tax on per capita income in Nigeria;
   iii)   Assess the effect of custom and excise duties on per capita income in Nigeria;
   iv)   Examine the effect of petroleum profit tax on per capita income in Nigeria?

1.2 Research hypotheses

H$_{o1}$: Companies income tax has no significant effect on per capita income in Nigeria;

H$_{o2}$: Value Added tax has no significant effect on per capita income in Nigeria;

H$_{o3}$: Custom and Excise Duties has no significant impact on per capita income in Nigeria;

H$_{o3}$: Petroleum profit tax has no significant on per capita income in Nigeria;

2. LITERATURE REVIEW
2.1 Theoretical Framework

This study is anchored on benefit theory of taxation, other supporting theories include ability to pay theory, political economy theory, expediency theory. fiscal policy theory and cost of service theory

2.1.1 Benefit Theory of taxation

The benefit theory of taxation was developed by Montesquieu in 1748. The theory provides a link between the enjoyment of the wealth and security provided by the government. It maintains that every citizen should be called upon to pay taxes in proportion to the benefits derived by him from services provided by the Government. In other word, the theory identified that the state provides certain facilities to its civilians who should, therefore, contribute to the cost or value of these facilities in proportion to benefits received by them. The more the benefit a citizen derives, the more taxes he should bear, is the main assumption of the theory.

Thomas and Hungerford (2010) identified that a mutual relationship between the state and individual tax payer should exist, while the tax payer fulfills their duty, the state should also provide the enabling environment for growth and development. The state should provide some basic social good that can enhance the human development of its tax payer. The theory is on the premise that payment must be conceived to be in exchange for benefit from the government and perhaps states should be obliged to confer personal tax benefits on tax payers who all contributed to government's coffers.

According to Akwe (2014), the theory suffers from several criticisms. That the assumption that the tax should be paid by an individual in proportion to benefits conferred by the State on that individual, is quite unrealistic because the benefits derived cannot be correctly measured in terms of money. Benefit is purely a subjective matter and there is no scientific way to measure the magnitude of benefit and its money value. If benefits accrued to an individual are the basis of taxation, the poor must pay higher taxes because in a welfare State the poor get more benefits than the rich from the expenditure of the Government. This is clearly unjust and as such an unacceptable proposition. It is also very difficult to determine under this theory what proportion of the general benefits accrues to particular individuals. Government is for civilized existence and there is, therefore, no basis for valuing the services which the State renders. Most of the services provided by the State are indivisible and beneficiaries are unidentified. For example, it is not possible to divide the benefits of national defense, etc. certain benefits accrue only to definite persons and in definite proportion. If this principle is followed, the whole of the benefit should return to the State as taxes.

2.1.2 Political economy theory

This theory was propounded by Jevon (1871) and it suggests that governments raise revenues and use the collected resources to finance public investment spending for the provision of public goods and services as well as human development (Mwakalobo, 2015). This implies that the political economy theory of fiscal policy may either promote or inhibit economic growth through its effects on decisions regarding resource allocation on public investment spending in physical and human capital development. This is especially true when revenue generation is not forthcoming, given the trade-off on public expenditure allocation and management among the expenditure items. Investment spending on physical and human capital can bolster long-term growth.

In developing countries, as in developed countries, governments play a key role in the provision of public goods and services. Choices have to be made how to allocate the limited resources, so governments face tradeoffs (Khattry, 2003). Khattry (2003) succinctly summarizes the tradeoffs which governments often face in the process of public expenditure management. Khattry (2003) identifies three tradeoffs. The first one involves the tradeoff between public spending on physical infrastructure and human capital development. Because of substantial costs involved in capital investment, the involvement of the private sector is limited. Thus, the government takes a large share of the burden to undertake such investment. But governments also put much emphasis on allocating substantial resources on human capital investment in order to maintain social cohesion and political legitimacy. The second dilemma is allocating resources between defense spending and spending on physical and human capital investment. It is contended that governments in developing countries facing deteriorating political and social conditions tend to invest in military apparatus in order to maintain political authority, while compromising physical and human capital investment.

The third is the concern of allocating resources between public investment in both physical and human capital infrastructure and interest payments on accumulated debt. Developing countries that have accumulated large debts have reduced spending on capital investment in order to service the debt and qualify for new borrowing to meet spending obligations. Following the implementation of economic reforms, many developing countries underwent fiscal adjustment.

In so doing they marginally managed to reduce their fiscal deficits. However, this resulted in cuts in public expenditure, especially when economic reforms included policy measures that restrain government revenue, thus inducing increased budgetary pressure and diminished resources available for public spending on domestic capital investment (Baldacci *et al*. 2004; Basu & Morrissey, 1997; Clement, *et al*., 2003; Drether, 2006; Gupta *et al*., 2002, 2005; Khattry, 2003; Kumar *et al*., 2007; Palley, 2006; Rao, 1999; Roy *et al*., 2006; Schade, 2005; Tanzi, 1993).

2.1.3 Expediency theory

This theory asserts that every tax proposal must pass the test of practicality of its administration (imposition and efficiency of collection). That economic and social objective of the state and its effects of a tax system should not be considered relevant in the design of a tax system (Bhartia, 2009). In the word of Chigbu, Akujobi and Appah (2012) opined that this position has a truth since it is useless to have a tax which cannot be levied and collected efficiently that can enhance human development.

Anyafo (1996) and Bhartia, (2009) further explained that the expediency theory is based on a link between tax liability and state activities. It assumes that the state should charge the members of the society for the services provided by it. This reasoning justifies imposition of taxes for financing state activities by inferences, provides a basis, for apportioning the tax burden between members of society. This proposition has a truth in it, since it is useless to have a tax which cannot be levied and collected efficiently. There are pressures from economic, social and political groups. Every group tries to protect and promote its own interests and authorities are often forced to reshape tax structure to accommodate these pressures. In addition, the administrative set up may not be efficient to collect the tax at a reasonable cost of collection. Tax revenue provides a powerful set of policy tools to the authorities and should be effectively used for remedying economic and social ills of the society such as income inequalities, regional disparities, unemployment, and cyclical fluctuations and so on.

2.1.4 Ability to pay theory

The theory of ability to pay was postulated by Kendrick in 1938. The theory is one of the most dominant theories in taxation that have attracted the interest of both the tax payer and payee. Kendrick proposed that taxes should be based on the taxpayer's ability to pay and that there is no *quid pro quo*. This may mean that tax payment is not about benefit of what have been paid. Hence, the theory regards tax payment as sacrifice by the tax payer and this appears reasonable and just that taxes should be levied on the basis of the taxable capacity of an individual. For instance, if the taxable capacity of a person A is greater than the person B, the former should be asked to pay more taxes than the latter.

However acceptable this theory is, it has also been criticized by the economist over the definition ability to pay. The economists are not unanimous as to what should be the exact measure of a person's ability or faculty to pay. The main viewpoints advanced in this connection are as follows:

Some economists are of the opinion that ownership of the property is a very good basis of measuring one's ability to pay. This idea is out rightly rejected on the ground that if a person earns a large income but does not spend on buying any property, he will then escape taxation. On the other hand, another person earning income buys property; he will be subjected to taxation. Is this not absurd and unjustifiable that a person, earning large income is exempted from taxes and another person with small income is taxed?

It is also asserted by some economists that the ability or faculty to pay tax should be judged by the expenditure which a person incurs. The greater the expenditure, the higher should be the tax and vice versa. The viewpoint is unsound and unfair in every respect. A person having a large family to support has to spend more than a person having a small family. If we make expenditure the test of one's ability to pay, the former person who is already burdened with many dependents will have to' pay more taxes than the latter who has a small family. So this is unjustifiable.

Most of the economists are of the opinion that income should be the basis of measuring a man's ability to pay. It appears just and fair that if the income of a person is greater than that of another, the former should be asked to pay more towards the support of the government than the latter. That is why in the modern tax system of the countries of the world, income has been accepted as the best test for measuring the ability to pay of a person.

2.2 Conceptual framework
2.2.1 Tax Revenue

According to Appah and Oyandonghan (2011), the compulsory levy which the government imposes on people and their properties is what is referred to as tax revenue, and this is used in the provision of security, social amenities and create conditions for economic well-being of the society. It was also stated that the primary purpose for which taxes were imposed by government is for the generation of revenue. Other fiscal attributes of tax, used in regulating the economy, are secondary. Uzoka and Chiedu (2018) see tax revenue as one of the sure ways of government generating the needed revenue that is channeled towards the growth and development of the economy. Worlu and Nkoro (2012) and Uzoka and Chiedu (2018) also see difficulty in government being able to harness the full potentials of tax revenue for development due to various forms of resistance like tax evasion, avoidance and corruption in the tax administration system. Aguolu (2004) also asserts

that tax revenue is an important source of revenue to government. This is the same view held by Edame and Okoi (2014), where tax proceed is said to be the major source of government revenue all over the world and provides the much-needed funds for traditional government functions like: the provision of goods, maintenance of law and order, defence against external aggression, regulation of trade and business to ensure socio-economic stability and growth of the society.

2.2.1.1 Companies Income Tax (CIT)

This is also known as Companies Income Tax or corporation tax. Companies Income Tax is a tax on the profit made by companies. It was introduced in Nigeria in 1961 and administered by the Federal Inland Revenue Services. Since enactment, the law on CIT has passed through series of amendment. The rate of CIT varies according to operation and size of turnover per annum. According to Onaolapo, Fasina, and Adegbite (2013), companies condemn this Company taxes on profit as it is seen as a penalty for success without compensation for failure. Company taxes are designed to collect revenue from firm's economic profit. The tax is on the net accounting profit: gross profit less administrative, operating and interest expenses. The revenue from Companies Income Tax has been low due to tax concessions, rebates and tax holidays allowed to newly established companies. Tax evasion and tax avoidance are also responsible for this low yield (Ebiringa & Emeh, 2012).

The corporate income tax is a tax imposed on the income, or the equity capital of legal corporate entities within a country. A firm or corporation's investment decisions are influenced by the expected return that they will receive on these investments. The after-tax return on an investment or project depends directly on the amount of corporate taxation. A higher rate of corporate taxation will lower the amount of investment by firms because it will reduce the after-tax return on these investments.

A Company is defined by Section 93 (1) of the Companies Income Tax Act CAP 60 Laws of the Federation of Nigeria (LFN), 1990 as "any company or corporation other than a corporation sole, established by or under any law in force in Nigeria or elsewhere". The registration of limited liability companies is being carried out by the Corporate Affairs Commission (CAC) in Nigeria. The world Limited (Ltd) or Public Company (Plc) is expected to end each name of a registered company. According to (CAMA), a company duly registered in accordance with the provision of the Companies and Allied Matters Act (hereinafter referred to as CAMA) or any enactment replaced by it is what the Act recognizes as a company in Nigeria. Although CAMA defines a foreign company to mean company incorporated elsewhere than in Nigeria, it does not recognize its existence in Nigeria for business activities. It only defines it for the purpose of identifying it to

comply with the mandatory incorporation processes before carrying on business in Nigeria and to benefit from exemption from registration. Section 54(1) CAMA provides that: Subject to Sections 56 - 59 of this Act, every foreign company which, before or after the commencement of this Act, was incorporated outside Nigeria, and having the intention of carrying on business in Nigeria shall take all steps necessary to obtain incorporation as a separate entity in Nigeria for that purpose, but until so incorporated the foreign company shall not carry on business in Nigeria or exercise any of the powers of a registered company and shall not have a place of business or an address for service of documents or processes in Nigeria for any purpose other than the receipt of notices and other documents as matters preliminary to incorporation under this Act.

However, the Companies Income Tax Act (CITA) defines 'company' in a broader sense. It defines a company as: "any company or corporation (other than corporation sole) established by or under any law in force in Nigeria or elsewhere". Looking at this definition, the CITA recognizes both Nigerian companies and foreign companies for the purpose of tax though on different basis. It should however be noted that the mandatory statutory provision of CAMA is clearly unambiguous in prohibiting the existence of a foreign company in Nigeria for any purpose (including carrying on business to make profit. In fact, any violation of the provision is banged with a penalty. The CITA on the other hand permits the existence of foreign companies and charge their profits derived from Nigeria to tax.

2.2.1.2 Petroleum Profit Tax (PPT)

This is a tax levied on the profit of oil companies. According to Akintoye and Tashie (2013), petroleum profit tax is singled out because of the significance of oil in the Nigerian public revenue performance. The petroleum profit tax act 1959 cap no. P13 imposes with effect from January 1st 1959, a tax on the profits from the mining of petroleum in Nigeria. This is to take care of economic rent on the land used for mining. The PPT is applicable to upstream operation in the oil sector i.e. production of crude oil and gas and sale of these as primary products to downstream operations (Ayodele, 2006). It is the most important tax in Nigeria in terms of its share of 95% of government revenue and 70% of total foreign exchange earnings. The major problem of this source of revenue is the fluctuation resulting from crude oil prices in the world market. The operation of the petroleum profits tax was extended to companies engaged in liquefied natural gas operations under PPT amendment no. 3 Decree 1979 No 95.

Petroleum taxation is the instrument of choice for sharing wealth between host governments and international oil companies. It is a direct tax, levied annually on net profit of a petroleum tax payer, who is carrying on the business of petroleum exploration and production (Evans & Hunt, 2011). Petroleum taxation

has some particular features as a result of oil industry's unique characteristics: the huge central contribution of revenue to the economy, the volatility of oil prices, the large operating and development costs, the high uncertainty associated with petroleum geology, the specific characteristics of individual oilfields, and the possibility of re-investment. The cost of petroleum projects tends to be incurred up-front and the time lags between the discoveries of oil or gas reserves to the time of first production can be significant. This adds to the challenge of designing and implementing appropriate petroleum tax system aimed at achieving a balance between both government and industry interest (Evans & Hunt, 2011). A variety of tax instruments have been used to capture the economic rent from oil activity over the years namely; gross royalty, brown tax, resource rent tax (RRT) and income tax. Royalty is an output- based tax because it is levied on the unit or value of production, whereas the other three instruments are profit based or cash flow taxes, because they are imposed on net profit or operating income after capital investment (Saheed, Abarshi & Ejide, 2014). One of the sources of revenue to the government is petroleum income as available statistic shows that the Nigeria has proven oil reserves of 36 billion barrels, condensate of 4 billion barrels, proven gas reserves of 187 trillion cubic feet and the present average daily production of oil is put at 2.6 million bbl/b (Egbogah, 2006; EIA, 2015).

2.2.1.3 Value Added Tax (VAT)

Value Added Tax (VAT) is an indirect tax on goods and services. It is a consumption-based tax, which is a tax on general consumption expenditure designed with the sole aim of raising revenue for the government. It is levied on the sale of goods and services as well as imported goods and services, and is borne by the final consumer of the goods or services. Value Added Tax (VAT) was introduced in Nigeria through the Value Added Tax Decree 1993 No. 102. VAT came as a replacement of existing Sales Tax that had been in operation since 1986. The Federal Inland Revenue Service administers VAT system in Nigeria. Even though VAT is administered by the Federal Government, the proceeds are shared by the Local, State and Federal Governments. The Federal Inland Revenue Service Board is empowered to provide direction, impose condition and specify records to be kept by traders. According to Somorin (2016) the initial target of VAT was large business but the scope was extended over time to cover all business sectors. In Nigeria, there is a Value Added Tax Technical Committee, which comprises of a Chairman, who shall be the Executive Chairman of the Federal Inland Revenue Service; all Directors in the Federal Inland Revenue Service; a Director in the Nigeria Customs Service, and three representatives of the State Governments who shall be members of the Joint Tax Board.

The functions of this Technical Committee include to: consider all tax matters that require professional and technical expertise and make recommendation as appropriate; advise the Board on the administration and management of VAT; and to attend to such other matters as the Board, may from time to time refer to it. A taxable person shall within six months of commencement of business or commencement of this VAT Act; whichever is earlier, register with the Board for the purpose of the tax.

2,2.1.4 Custom and Excise Duties

According to Ekeocha, Ekeocha, Malaolu and Oduh (2012) customs duties was introduced in 1860 as an import levy and this is seen as one of the oldest forms of modern taxation. This represents taxes on import into Nigeria, charge either as a percentage of the value of imports or as a fixed amount of contingent on quantity. (Buba, 2007). Akhor, Atu and Ekundayo (2016) noted that customs and excise duty is a type of non-oil tax revenue that has contributed to the economic growth of Nigeria. Customs and excise duties are forms of indirect tax which is levied on both imported and exported goods and services. They are good instrument for protecting domestic companies in their infant stage, regulate business activities, income redistribution and checking inflation. Buba (2007) stated that excise duties which were introduced in 1962 on several goods was meant to broaden the revenue base of Nigeria. Before the advent of oil in Nigeria, one of the important components of the non-oil revenue in Nigeria is the custom and excise duties. The Nigerian Custom Service is saddle with the responsibility of collecting duties, excise, fees, tariffs and other levies imposed by the federal government on imports, exports and statutory rates.

2.2.2 Human Development

Arnold, (2011), stated that Economic development is related to improvement in the quality life of people through the introduction of better packaged goods and services using recent technology and infrastructural development, reduction of risk and dynamics of innovation and entrepreneurship. According to Afuberoh and Okoye (2014) the provision of an enabling environment for local communities and regions to develop new methods of producing goods in a sufficient quantity which may enhance exportation to other countries as well as creating an enabling environment for businesses to thrive is the main objective and aim of economic development. Grace David and Oliver (2016) noted that indicators asides indicators such as education, transportation networks, health condition and water supply, which can be used to ascertain economic development, human development index (HDI) is a universal standard measure for long term progress and citizen's welfare.

According to United Nations Development Programme (2018), the Human Development Index (HDI) was developed to emphasize that people and their abilities should be the ultimate criteria for evaluating the development of a country not just economic growth

alone. Emmanuel (2013) defined human development index as a statistical tool employed to measure the overall achievement of a country in its social and economic dimensions. These social and economic dimensions are assessed based on the health of people, their level of education attainment and their standard of living. UNDP (2018) also noted that Human Development Index (HDI) is the concise measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living. Specifically, the report noted that a long and healthy life is measured by life expectancy, knowledge level is measured by mean years of education among adults, and standard of living measured by Gross National Income (GNI) per capita. The HDI is the geometric mean of normalized indices for each of the three dimensions. To enhance comparability among countries, the UNDP (2018) also states that the data are all obtained from the United Nations institutions responsible for the generation of credible data on the three major proxies of measuring HDI. The United Nations Population Division provides data on the life expectancy of nations, the United Nations Education and Scientific and Cultural Organization Institute for Statistic provides data on the mean years of schooling and expected years of schooling and the World Bank provides data on the GNI per capita.

Abraham and Ahmed (2011) posited that the concept of Human Development Index goes beyond merely having a good GDP figure, it actually entails a broader definition that touches on the well-being of the people. They view three composite dimensions as important in ascertaining the HDI of a people, these are: living a long and healthy life, which is measured by life expectancy; being educated, which is measured by adult literacy and enrollment at the primary, secondary and tertiary schools and a good standard of living which is measured by the purchasing power parity (PPP) and income of the people. From their study, they stated that the UNDP report of 2005 shows that between 2001 and 2003, the HDI in Nigeria dropped from 0.463 to 0.45. during this same period, Nigeria's GDP grew from 4.6% to 10.2% according to the CBN report of 2007. These figures clearly show that economic growth does not necessarily translate to human development because they do not impact on the three cardinal factors listed above.

a) GNI Per Capita

GNI per capita is the measure of income and the overall level of resources available to a country. According to Kim (2018), it begins with the recording of GNI in the local currency of the country, in line with relevant international standards. The World Bank Atlas conversion factor method is then used to convert the local currency denominated GNI to United States dollar. The US dollar denominated GNI is then divided by the annual population of a country to get the country's GNI per capita. According to the UNDP (2018), countries without a value of GNI per capita in constant 2011 PPP

terms for 2017 reported by the World Bank, the country's projected GDP growth rate by the IMF is applied to the most recent GNI values in constant PPP terms. Vaggi (2017) opined that the GNI per capita, as calculated by the World Bank is the most widespread system of classification of countries, along with other indexes.

Pritzker, Arnold and Moyer (2015) define Gross National Income (GNI) as the Gross Domestic Income (GDI) plus the net of income receipts from abroad and income payments abroad. It is a measure of the income of a country from production both within and outside the country. Similarly, the Scottish Government Riaghaltas na h-Alba (2018), stated that the GNI is an adjustment made to the conventional Gross Domestic Product (GDP) so as to account for the financial flows into and out of the country as a result of ownership. GNI per capita has often been used as a reasonable measure for the purpose of classifying countries along income lines. It is best suited for ranking countries because of its acceptable indicators (Fantom & Serajuddin, 2016). Paliova and McNown (2019), stated that one of the main objectives of the Sustainable Development Goals (SDGs), is to address poverty and promote per capita growth and increase GNI per capita in PPP in all regions. Vaggi (2017) also contributed to the discourse on the importance of the GNI per capita. He stated that the GNI per capita calculated by the World Bank, is a globally acceptable system of classifying countries along with other indexes, which is commonly used by international organizations, aid agencies, academic researchers and the media. Vaggi (2017), further stated that the GNI per capita uses four categories to group countries based on the income levels. These categories are Low Income Countries (LICs), Lower Middle-Income Countries (LMICs), Upper Middle-Income Countries (UMICs) and High-Income Countries (HIC). The Atlas method uses three thresholds defined in terms of per capita to separate these four categories into their respective groups.

Fantom and Serajuddin (2018) posited that the GNI per capital has been used since 1989 to classify countries into four incomes groups- low income, lower middle income, upper income and high income. They also stated that a three-year average exchange rate is used in calculating the GNI per capita. Specifically, the World Bank website provides a breakdown categorize GNI per capita in terms of the absolute amount of GNI per capita income:

2.3 Empirical literature review

The empirical review of related literature showed the dearth of literature on the three main objectives of this study, namely: tax revenue and life expectancy at birth, tax revenue and expected years of schooling and tax revenue on GNI per capita. These three are components of the HDI and most studies have been on the HDI as a whole. Segregating each of the components of HDI for study has rarely been done, hence the dearth of empirical literature in those areas.

Consequently, this study will focus on reviewing literature on HDI and human development as a whole.

Yaro and Adeiza (2021) investigated the relationship between taxation and economic growth in Nigeria. The major objective of the study is to see how tax is being collected by the tax authority and how it's being used in the development of the economy. The analysis of data was presented using simple parentage and narration response. It consisted of statistical calculation perform with raw data to provide answers to the questions including the research. The finding showed that the effective management in the Federal Inland Revenue Service (FIRS) enhanced revenue. This means there was a significant and positive relationship between non-oil revenue profit tax and growth of the Nigeria economy.

Etim *et al.,* (2021) Using a descriptive and inferential statistical technique, correlational and regression statistics, and an *ex post facto* research design, the study compared the effects of direct and indirect taxation on the growth of the Nigerian economy. The study demonstrated that indirect taxes have a greater detrimental impact on economic growth.

Gbeke and Nkak (2021), used data covering from 1995 to 2019 to study Nigeria's tax revisions and economic growth. The study comes to the further conclusion that while value added tax (VAT) and petroleum profit tax (PPT) have a negative influence on economic growth, corporation income tax and customs & excise taxes (CED) have a beneficial impact on economic growth.

Emeneka (2021), evaluated the impact of tax reforms on Nigeria's economic expansion. The ex-post research design was used. At the 5% level of significance, inferential statistics were used in the study, including Pearson correlation and the Ordinary Least Square (OLS) method. It was discovered that Personal Income Tax significantly decreased Nigeria's GDP per capita. Following that, it was suggested that the government diversify the economy for greater development in order to broaden the basis of tax collection.

Ezejiofor *et al.,* (2021), determined the impact of Nigerian tax collection on per capita income. An ex-post facto research approach was employed in the study. Correlation and Ordinary Least Square (OLS) regressions were used to evaluate the hypothesis. According to statistical analysis, customs and excise duties have a minimally positive impact on per capita income. The study found a positive correlation between total tax revenue and unemployment and advised the government to allocate its social welfare programs so that tax payers directly benefit from them.

John and Dickson (2020) using Error Correction Models analyzed the influence of tax revenue on economic growth using both unadjusted and adjusted Gross Domestic Product from 1984 to 2018. When GDP was not adjusted for inflation, PPT had a minor but beneficial effect on economic growth, whereas VAT and CIT had a large but negative impact on GDP. PPT had a negative and insignificant impact on adjusted GDP, but VAT had a positive and considerable impact, and CIT had a negative and significant one.

Adeusi *et al.,* (2020) investigated the impact of non-oil revenue of the economic growth of Nigeria where company income tax, value added tax, personal income tax and custom and excise duties where the non-oil revenue for the period 1994–2018 with data gotten from Federal Inland Revenue Service and National Bureau of Statistics. Ordinary Least Square Regression Techniques was used for data analysis. The study revealed that Value Added Tax and Custom and Excise duties have more significant positive impact on economic growth while Company Income Tax and Personal Income Tax have a negative but significant effect on economic growth.

Jukka and Tarmo (2017) studied the linkage between statutory retirement ages, life expectancy working lives and tax revenue using a numerical economic model, calibrated to the Finnish economy and demographics. The study also examined the consequences of an increase in pensions on public health and long-term care (LTC) expenditure. The study found that mortality affects both retirement ages and per capita use of health and LTC services.

Ofoegbu, Akwu and Oliver (2016) examined the effect of tax revenue on the economic development of Nigerian, and to ascertain whether there is any difference in using HDI and GDP in establishing the relationship. The approach adopted by this study was that of using annual time series data for the period 2005 to 2014 to estimate a linear model of tax revenue and human development index using ordinary least square (OLS) regression technique. Findings show a positively and significantly relationship between tax revenue and economic development. The result also reveals that measuring the effect of tax revenue on economic development using HDI gives lower relationship than measuring the relationship with GDP thus suggesting that using gross domestic product (GDP) gives a painted picture of the relationship between tax revenue and economic development in Nigeria. The researcher, therefore, conclude that tax revenue can be an instrument of economic development in Nigeria. Development of any tax policy on tax revenue for economic development should better be based on human development index rather than GDP. This study provides a useful insight for the government, stakeholders and policy makers into the importance of tax revenue for economic development as

a result; income derived from tax should be judiciously used to encourage citizens to continue to pay tax.

Madugb, and Joseph (2016) examined the effect of value added tax on economic development in Nigeria using human capital development index as the measure of development and value added tax as independent variable. The approach adopted by this study was that of using annual time series data for the period 1998 to 2014. The ordinary least square (OLS) multiple regression technique was applied to estimate a linear model of value added tax revenue and human development index. Findings show a positively and insignificantly effect of value added tax revenue on economic development.

Adam (2015) examined the effects of tax revenue generation capacity on public spending in Sub-Saharan Africa drawing empirical lessons from three East African countries, Tanzania, Kenya and Uganda. It employs the co-integration and error-correction modelling framework to analyze the effects of erratic and inadequate revenue generation on physical and human capital development in Tanzania, Kenya, and Uganda using time-series data over the period 1970-2005.The results unambiguously demonstrate that changes in tax revenue have strong impacts on physical and human capital development spending in the three countries. The policy lessons that can be drawn from the findings of this paper is that the three countries should strike a balance of the composition of government expenditure; reprioritize public expenditure into productive spending and strive to generate sufficient tax revenue to finance budget expenditures on physical and human capital development in order to reduce poverty and promote long-run economic development.

Houa, Walshc and Zhang (2015) analysed the dynamics of human development index using data from 20 countries for the period 1999-2012 on number of schooling years, human capital development index per capita income, government taxes, training, and unemployment. Pearson product moment correlation was combined with descriptive statistics. The analyses showed that all the variables were strongly linked or related to each other. On the strength of this, the study recommended that the government should invest in human capital to trigger balance growth in their countries.

Nwakanma and Nnamdi (2013) examined the relationship between taxes and human development index in Nigeria for the period 1970-2010. Based on the Ordinary Least Squares methodology the study revealed that Petroleum Profit Tax, Company Income Tax and Excise Tax respectively exhibit a positive relationship with the level of HDI. Also, a negative relationship exists between corporate tax and Human Development Index. The Johansen maximum likelihood procedure shows that a long-run relationship exists among the variables. The study recommended that there is need to developed

federal fiscal system that could guarantee the full potential of taxation in achieving HDI in Nigeria.

Nwakanma and Nnamdi (2013) examined Taxation and national development from 1998-2012. The study sought to examine the effect of value added tax, petroleum profit tax and company income tax on the human development index, number of schooling years and per capital income. The estimating technique was vector error correction. The study revealed that petroleum profit tax, company income tax and value added tax had a positive and insignificant impact on human development and number of schooling years. It was also shown that petroleum profit tax, company income tax and value added tax had a negative and insignificant impact on human development

Ali, Raza and Yousuf (2012) investigated the role of fiscal policy in the human development of the Pakistan. The study employed the autoregressive distributed lags (ARDL) bounds testing approach of co-integration on different macroeconomic variables from 1972 to 2010 to explore the impact of government expenditure and the political regime on the welfare of the people in the country. The results show that increase in per capita income and education expenditure have positive effect and current expenditure has negative impact on the human development while tax revenue has a negative and insignificant impact on human development which indicate that tax policy have no development effect and the political regime of the democratic governments has a negative effect on human development index. The study recommended that there is need for policy makers to reduce the level of corruption in the public spending to gain the maximum benefits for the human welfare.

Okafor (2012) examined tax revenue and economic development in Nigeria for the period 1986 - 2010. The study modelled the petroleum profit tax (PPT), Companies' income taxes (CIT), Tertiary education trust fund and education tax (EDT) against human development index. Autoregressive distributive lag technique was applied in estimating the model. The analysis performed revealed 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.

3. RESEARCH METHODOLOGY
The study adopted the *ex-post facto* research design as the variables to be studied are secondary data

and may offer the researcher control over them {Arikpo & Adesola, 2017).

Annual time series data were collected for the period 1990 to 2021 from the. Central bank of Nigeria statistical bulletin and the Federal Inland Revenue Services documentations.

3.1 Model specification

The structure suggested and adopted in this research is a version of the benefit theory of taxation developed by Montesquieu in 1748. The theory provides a link between the enjoyment of the wealth and security provided by the government. It maintains that every citizen should be called upon to pay taxes in proportion to the benefits derived by him from services provided by the Government. In other word, the more the benefit a citizen derives, the more taxes he should bear and the higher the tax revenue. Therefore, the relationship suggested by this theory can be expressed mathematically as thus:

$$HDI = f(TRE) \dots\dots\dots\dots\dots\dots\dots\dots Eqn. (1)$$

Where:
HDI = Human Development Index
TRE = Tax Revenue

This study however decomposes the exogenous variable-tax revenue in the equation above into company income tax, petroleum profit tax, value added tax, and customs and excise duties and the endogenous variable-human development is surrogated by per capita income. Given this decomposition, the relationship is functionally expressed thus:

$$PCI = f(CIT, PPT, VAT, CED) \dots\dots\dots\dots Eqn. (2)$$
This functional expression may be restated in ordinary least square terms as:
$$PCI = a_0 + y_1 CIT + y_2 PPT + y_3 VAT + y_4 CED + e_t$$
$$\dots\dots\dots\dots\dots\dots Eqn. (3)$$

Where:
PCI = Per Capita Income
CIT = Company Income Tax
PPT = Petroleum Profit Tax
VAT = Value Added Tax
CED = Customs and Excise Duties
a_0 = Regression constant
$y_1 - y_3$ = Regression parameters

3.2 Estimation techniques
3,2.1 Descriptive statistics

The study employed the descriptive statistics to examine the structure of the time series using descriptive analytical tools such as simple tables, graphs and percentages. Descriptive analysis enabled the study to appreciate the trend and pattern of the time series within the period under review, descriptive analysis was performed to show the graphical and numerical representation of the data obtained. The numerical representation showed the mean, maximum, minimum, skewness, kurtosis and the probability of Jarque-Berra statistics for the secondary data. This was with the aim of describing the data set. Thus, p-value of Jarque Berra statistics higher than the acceptable level of significance of 5% indicates that the series is normally distributed.

3.2.2 Unit root test

The study employed the Augmented Dickey Fuller (ADF) unit root test to examine whether the time series was stationary since time series data usually follow a particular trend and since economic theory requires that they be subjected to differencing or de-trending procedures to avoid spurious results. Applying the Augmented Dickey Fuller (ADF) tests for unit root, three possibilities may exist and these possibilities will determine the appropriate model for estimation.

3.2.3 Correlation matrix

Since relationship does not often implied causality, this study applied the correlation matrix technique to assess the relationship among the variables of the model. The Pearson product moment correlation technique was applied to examine the strength of the relationship among the variables of this study.

3.2.4 Autoregressive Distributed Lag (ARDL)

The study employed Autoregressive Distributed Lag (ARDL) model approach because the unit root test results for all the series reveals order I(0), I(1) or combination of I(0) and I(1) with evidence of no cointegration and with none of the series having order (2). From the result of the bound test, if the variables are cointegrated, the study proceed to estimate both short-run (ARDL) and long-run (VECM) model. If on the other hand the variable is not co-integrated, then the study only specifies the short run (ARDL) model in which case there would not be any need to specify VECM model. The ARDL (p q) model is generalized thus:

$$Y_t = y_{0i} + \sum_{i-1}^{p} \partial_i y_{t-1} + \sum_{i-0}^{q} b_i x_{t-1} + \varepsilon_{it} \dots Eqn. (8)$$

Where:
Y_t = vector
X_t = Regressors
∂ and b = coefficient
y_{0i} = constant term
P and q = optimal lag order
ε_{it} = Stochastic error term

To perform the bounds test for co-integration, the conditional ARDL model was specified thus:
$$\Delta inPCI_t = a_0 + b_1 inPCI_{1t-i} + b_2 inCIT_{t-i} +$$
$$b_3 inPPT_{t-i} + b_4 inVAT_{t-i} + b_5 inEDT_{t-i} +$$
$$b_6 inCED_{t-i} + \sum_{i=1}^{p} a_1 \Delta inPCI_{t-1} +$$
$$\sum_{i=1}^{q} a_2 \Delta inCIT_{t-i} + \sum_{i=1}^{q} a_3 \Delta inPPT_{t-i} +$$
$$\sum_{i=1}^{q} a_4 \Delta inVAT_{t-i} + \sum_{i=1}^{q} a_5 \Delta inEDT_{t-i} +$$
$$\sum_{i=1}^{q} a_6 \Delta inCED_{t-i} + e_{2t} \dots\dots Eqn. (11)$$

There was no co-integration, the ARDL model was specified as:

$$\Delta inPCI_t = a_0 + \sum_{i=1}^{p} a_1 \Delta inPCI_{t-1} +$$
$$\sum_{i=1}^{q} a_2 \Delta inCIT_{t-i} + \sum_{i=1}^{q} a_3 \Delta inPPT_{t-i} +$$
$$\sum_{i=1}^{q} a_4 \Delta inVAT_{t-i} + \sum_{i=1}^{q} a_5 \Delta inEDT_{t-i} +$$
$$\sum_{i=1}^{q} a_6 \Delta inCED_{t-i} +$$
$$e_{3t} \dots\dots\dots\dots\dots\dots\dots\dots\dots \text{ Eqn. (14)}$$

However, if there was cointegration, the error correction model (ECM) representation is specified thus:

$$\Delta inPCI_t = a_0 + \sum_{i=1}^{p} a_1 \Delta inPCI_{t-1} +$$
$$\sum_{i=1}^{q} a_2 \Delta inCIT_{t-i} + \sum_{i=1}^{q} a_3 \Delta inPPT_{t-i} +$$
$$\sum_{i=1}^{q} a_4 \Delta inVAT_{t-i} + \sum_{i=1}^{q} a_5 \Delta inEDT_{t-i} +$$
$$\sum_{i=1}^{q} a_6 \Delta inCED_{t-i} + \lambda ECT_{t-1} +$$
$$e_{3t} \dots\dots\dots\dots\dots\dots\dots\dots\dots \text{ Eqn. (17)}$$

It is expedient to state that the parameters and variable retain their meanings as has been discussed above

4. RESULTS AND DISCUSSIONS
4.1 Data Presentation

Tables 1: Trend performance of the effect of tax revenue on human development in Nigeria. Data presented in billion Naira

YEARS	PCI	CIT	PPT	VAT	CED
1990	202.764	2997	26909	NA	8640.9
1991	196.575	3828	38616	NA	11456.9
1992	195.885	517	51477	NA	16054.8
1993	194.039	9554	59208	NA	15486.4
1994	189.747	12275	42803	5.03	18294.6
1995	188.546	21878	42858	6.26	37364
1996	191.363	22000	76667	11.29	55000
1997	192.046	26000	68574	13.91	63000
1998	191.995	33300	68000	16.21	57700
1999	188.239	46200	164300	23.7505	87900
2000	193.716	51100	525100	30.6438	10150
2001	201.505	68700	639200	44.9129	170600
2002	225.183	89100	392200	52.632	181400
2003	240.404	114800	683500	65.8876	195500
2004	258.797	113000	1183600	96.1956	217200
2005	269.866	140300	1904900	87.4498	232800
2006	280.595	244900	2038300	110.5668	177700
2007	293.306	275300	1600600	144.3728	241400
2008	306.200	420600	2060900	198.0653	281300
2009	323.059	600600	939400	229.3232	205250
2010	344.550	666060	1480360	275.5746	223325
2011	353.251	715440	3070591	318	214287
2012	358.371	1564812	8137913	347.6882	443811
2013	368.052	1768439	5817913	389.5263	4566645
2014	380.674	1678149	5518105	388.8523	48778
2015	381.058	2653192	2669164	381.2652	470153
2016	365.300	3816350	6400000	397.0641	384379
2017	358.830	3234771	4534582	473.7655	427266
2018	356.401	3525561	5467291	533.7396	405822.5
2019	357.616	3380166	5000937	503.7526	416544.3
2020	357.008	3452864	5234114	518.7461	411183.4
2021	357.312	3416515	5117525	511.2493	413863.8

Sources: CBN statistical bulletin, vol.32, 2021; FIRS reports, various collections; World Bank database and Government gazette, various year. All variables are expressed in billion naira

4.1.1 Data analyses
This section analyses the data collected from the various sources in Nigeria. The essence was to test the study's hypotheses and answer the research questions. The key areas covered by this section were descriptive statistics, correlation matrix, unit root test, autoregressive distribution lag analyses of all the equations, test of hypotheses and discussion of findings.

3.1.2 Descriptive statistics
Presented below was the descriptive statistics of the data set collected for this study. These data were keyed into the E-views 10 statistical package which generated the result as presented in table 2 below.

Table 2: Descriptive statistics

	PCI	CIT	PPT	VAT	CED
Mean	83.64000	876113.1	216323.3	21.34959	376681.0
Median	93.00000	244900.0	96300.00	14.26910	205250.0
Maximum	370.0000	3816350.	5067322.	76.70132	4566645.
Minimum	-204.0000	12275.00	-2848941.	-8.745800	10150.00
Std. Dev.	150.2156	1214409.	1606447.	22.45665	883902.5
Skewness	0.008437	1.357481	1.062983	0.739461	4.508634
Kurtosis	2.299603	3.430499	5.619032	2.721968	21.92258
Jarque-Bera	0.511292	7.871194	11.85319	2.358864	457.6823
Probability	0.774416	0.019534	0.002668	0.307453	0.000000
Sum	2091.000	21902827	5408083.	533.7396	9417025.
Sum Sq. Dev.	541553.8	3.54E+13	6.19E+13	12103.22	1.88E+13
Observations	28	28	28	28	28

Source: Researchers' E-views 10 Computation, 2023

The study began this section by comprehensively examining the descriptive statistics of the data set. Table 2 showed the result of the descriptive or summary statistics. It is important to states that for the summary statistics, the raw data in their untransformed state were used to enable an appraisal of the structure of the raw data used for the regression analysis. The summary statistics was used to examine the measures of central tendency, the measures of dispersion and the measures of normality of the data set. The measures of central tendency examined the mean and median values of the data set. While the mean considered the average values of the variables the median looked at the middle distribution of the data set.

From the result, it could be observed that the mean values per capita income, company's income tax, petroleum profit tax, value of transaction, and customs and excise duties tax of Nigeria were respectively 83.640, 876113.1, 216323.3, 21.349, and 376681.0. The median values of these variables were 93.00, 244900, 96300, 14.269 and 205250 respectively.

The measures of dispersion considered how widely spread the dataset was from their mean values. The measures of dispersion considered in this study were the minimum value, the maximum values and the standard deviation. From the E-view output, range values of per capita income, companies' income tax, petroleum profit tax, value of transaction, and customs and excise duties tax were -204.00 to 370.00, 12275.0 to 3816350, -2848941 to 5067322, -8.7458 to 76.7013, and -10150.00 to 4566645 respectively. The standard deviation measures how far the observations are from their sampled averages. From the summary output of the data set, the standard deviation was 150.2156, 1214409, 1606447, 22.45665, and 883902.5 respectively for per capita income, companies' income tax, petroleum profit tax, value of transaction, and customs and excise duties tax respectively.

It is worthy of note that the measurement of normality measures whether the data set is normally distributed or otherwise. The measures of normality considered by this study were skewness and kurtosis. Skewness measured the degree of asymmetry of the series. The series may be normally skewed, positively skewed or negatively skewed. A skewness value of zero is said to be normal and implies that the distribution is symmetry around its mean; a positive skewed value implies that the distribution has a long right tail, implying that the skewness value is higher than the sampled mean. A negative skewness implies that the distribution has a long-left tail with lower values than the sampled mean. From the E-view result, the skewness value of 0.008437, 1.357481, 1.062983, 0.739461 and 4.508634 for per capita income, companies income tax, petroleum profit tax, value added tax and customs and excise duties respectively showed positive skewed distribution, implying that their series had long right tail, meaning that their series produced higher values than the sample mean.

Kurtosis measures the peakedness or flatness of the data relative to the normal distribution. Kurtosis could be mesokurtic, leptokurtic or platykurtic. A kurtosis value of 3.0000 is mesokurtic, meaning that the distribution is normal. A kurtosis value greater 3.0000 is said to be leptokurtic or positive kurtosis, meaning that it has a peaked curve and produces higher values than the normal. A kurtosis value less 3.0000 is platykurtic or negative kurtosis, meaning that it has a flatted curve and that it produced lower values than the sample mean. From the result obtained in table 2, the kurtosis values of 2.2996, and 2.7219.2 respectively for per capita income and value of transaction were less than 3.0000 required for a normal distribution. Hence, the data for these variables had flatted curve and produced lower values than the sample mean. However, the coefficient of the kurtosis of the companies' income tax, petroleum profit tax, and customs and excise duties had kurtosis values of 3.430499, 5.619032, and 21.92258 respectively which were greater than 3.0000 required for a normal distribution It therefore means that these datasets were leptokurtic, meaning that they produced higher value than the normal.

The Jarque-Bera (JB) test measures the difference between the skewness and kurtosis of the series with those from the normal distribution. The null hypothesis for the JB statistics is that the series is normally distributed. Given the result in table 4.2.1 above, the JB values of 0.511292 and 2.358864 for per capita income and value added tax with their respective p-values of 77.44 percent and 30.74 percent greater than 5 percent meant that the null hypotheses for these variables were not rejected. It therefore meant that the dataset for these variables were normally distributed. On the other the JB values of, 7.871194, 11.85319 and 457.6823 for company's income tax, petroleum profit tax

and customs and excise duties with their respective p-values of 1.95 percent, 0.26 percent and 0 percent, less than 5 percent showed that these variables were not normally distributed.

4.1.3 Correlation matrix
The correlation matrix was used to determine the relationship among the variables of this study. This is because relationship often does not always imply causality, hence, the need to examine the strength of relationship among the variables of this study. The result of the correlation matrix was presented in table 3, below:

Table 3: Correlation matrix

Correlation					
Probability					
Observations	PCI	LCIT	LPPT	LVAT	LCED
PCI	1.000000				

	28				
LCIT	-0.399302	1.000000			
	0.0480	-----			
	28	28			
LPPT	-0.165919	0.077942	1.000000		
	0.4280	0.7111	-----		
	28	28	28		
LVAT	-0.035655	0.420663	0.020415	1.000000	
	0.8656	0.0363	0.9228	-----	
	28	28	28	28	
LCED	0.144864	0.267856	-0.296993	0.269520	1.000000
	0.4896	0.1955	0.1494	0.1926	-----
	28	28	28	28	28

Source: Researchers' E-views 10 Computation, 2028

Table 3 presented the correlation matrix result of the study variables, from the result; the correlation coefficient of the relationship between per capita income and custom and excise duties, customs and excise duties and companies' income tax, value added tax and customs and excise duties, companies' income tax and value added tax and petroleum profit tax and value added tax were positive but insignificant. This is so because their Pearson product moment correlation values of 0.1448, 0.2678, 0.2695, 0.4206 and 0.0.0204 were positive and their respective corresponding p-vales were more than 5 percent. Also, the relationship between companies' income tax and per capita income, per capita income and petroleum profit tax, per capita income and value added tax, customs and excise duties and petroleum profit tax

were negative and insignificant. This is so because their Pearson product moment correlation values of 0.3393, 0.1659, 0.0356 and 0.2969 had their corresponding p-values greater than 5 percent. The relationship between companies' income tax and per capita income was negative but significant. This is evidenced by its p-value of 4.80 percent.

4.1.4 Unit root test
The test for stationarity was conducted to examine whether there is unit root in the data set collected for this study. This test was achieved through the Augmented Dickey Fuller approach, hereafter referred to as ADF. The result of the ADF as extracted is presented in table 4. below.

Table 4: Augmented Dickey Fuller (ADF) Unit Root Test

Variables	ADF Test Statistics		Order of integration
	Level	1st Difference	
PCI	-20.59683		I (0)
LCIT	-3.631842		1(0)
LPPT	-0.343486	-5.411600	1(1)
LVAT	-2.991878	-5.740811	I(1)
LCED	-5.031456		I(0)

Test critical values at level: 1% = -3.711457, 5% = -2.981038, 10% = -2.629906
Test critical values at 1st Diff: 1% = -3.788030, 5% = -3.012363, 10% = -2.646119
Source: Researchers' E-views 10 Computation, 2023

Table 4. showed that petroleum profit tax, and value added tax had unit root at levels but after differencing one time they became stationary. Also, the result clearly showed that per capita income, companies' income tax and customs and excise duties tax had no unit root at levels. This was evidenced since their test statistics at levels, taking their absolute values were greater than their critical value at 5 percent level. Since these variables were integrated of different orders, in other words, since these variables were of both order I (1) and I (0), it was indicative that the estimating model is Autoregressive Distributive Lag (ARDL) technique.

4.1.5 VAR lag order selection criteria

To select the optimum lag length for this study, the VAR lag order selection criteria was applied. The result was presented in table 5 below. From the table, majority of the information criteria in the three equations showed that lag two was most suitable lag length for this study. It therefore meant that lag three was the optimal lag length for this study.

Table 5: VAR lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
Endogenous variables: LCIT LPPT LVAT LCED						
0	-27.79497	NA	7.61e-07	2.938693	3.234909	3.013190
1	101.2493	179.5398*	2.63e-10	-5.152109	-3.078598*	-4.630627
2	152.8952	44.90949	1.48e-10*	-6.512623*	-2.661817	-5.544156*
Endogenous variables: LCIT LPPT LVAT LCED						
0	-73.32302	NA	3.99e-05	6.897654	7.193870	6.972151
1	36.46484	152.7483*	7.35e-08*	0.481319	2.554830*	1.002801*
2	75.55329	33.98996	1.23e-07	0.212757*	4.063564	1.181224
Endogenous variables: PCI LCIT LPPT LVAT LCED						
0	-72.55361	NA	3.73e-05	6.830748	7.126964	6.905246
1	36.75378	152.0798*	7.16e-08*	0.456193*	2.529704*	0.977675*
2	66.47875	25.84780	2.71e-07	1.001848	4.852654	1.970315
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Source: Researchers' E-views 10 Computation, 2023

4.1.6 Analyses of long run dynamics

From the results of the ARDL estimates for each of the equations of life expectancy at birth, expected years of schooling and per capita income were presented and discussed in terms of their signs and magnitudes.

Table 5b: Long run dynamics of per capita income

Dependent Variable: D(PCI)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	430.5169	1190.482	0.361632	0.7416
D(PCI(-1))	0.244090	0.508942	0.479603	0.6643
D(PCI(-2))	0.696365	0.747933	0.931053	0.4205
D(LCIT(-1))	-273.2406	380.8162	-0.717513	0.5249
D(LCIT(-2))	-150.6760	364.1968	-0.413721	0.7069
D(PPT(-1))	-0.001683	0.000872	-1.930361	0.1491
D(PPT(-2))	-0.001230	0.000631	-1.949969	0.1463
D(VAT(-1))	-1.132706	3.800218	-0.298063	0.7851
D(VAT(-2))	3.597977	4.128006	0.871602	0.4476
D(EDT(-1))	43.26273	26.08546	1.658499	0.1958
D(EDT(-2))	13.06920	8.290934	1.576325	0.2130
D(CED(-1))	-0.000315	0.000482	-0.653647	0.5600
D(CED(-2))	-0.000768	0.000501	-1.532821	0.2229
PCI(-1)	-1.963214	0.883328	-2.222519	0.1128

Dependent Variable: D(PCI)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LCIT(-1)	-37.47128	123.0660	-0.304481	0.7807
PPT(-1)	0.001629	0.000858	1.899388	0.1537
VAT(-1)	20.29629	13.66818	1.484931	0.2342
EDT(-1)	-61.83637	37.00950	-1.670824	0.1933
CED(-1)	0.000071	0.000521	0.137204	0.8996
R-squared	0.881917			
Adjusted R-squared	0.773421			
F-statistic	4.244773	Durbin-Watson stat		2.955151
Prob(F-statistic)	0.051792			

Source: Researchers' E-views 10 Computation, 2020

An examination of table 5b showed that the signs of the parameter of the first and second lagged period of per capita income were positive. This implied that a one percent increase in the first and second lagged period of per capita income led to about 24.40 percent and 69.63 percent increases in the current period per capita income. Further examination of the table showed that companies income tax and petroleum profit tax had negative effect on the current period per capita income. One percent increases in the first and second lagged periods of companies' income tax and petroleum profit tax led to about 273.24 percent, 150.67 percent, 0.16 percent and 0.12 percent decreases in the per capital income in the long run. Value added tax in its first lag had a negative effect on per capital income but a positive effect in its second lag on per capital income. This conclusion was reached as the parameter of its first lagged period had a negative sign while that of its second lag period had a positive sign. One percent increase in the first and second lagged period of value added tax led to about 113.27 percent decrease but 359.79 percent increase in the current period long term per capita income in Nigeria. in its first and second lagged period had positive effect on per capita income in Nigeria. The implication of this was that a one percent increase in the

first and second lagged period of led to 4326.27 percent and 1306.92 percent respective increase in the current period per capita income. Finally, the first and second lagged periods of customs and excise duties had a negative effect on the per capita income of Nigeria. This implies that a one percent increase in the current period customs and excise duties led to about 0.031 percent and 0.076 percent decreases in the current period long run per capita income.

The R^2 and R^2 adjusted values of 0.8819 and 0.7734 implied that the total variation in the observed behaviour of per capita had been jointly explained by the variations in companies' income tax, petroleum profit tax, value added tax and customs and excise duties. The R^2 adjusted value of 0.7734 specifically showed that about 77.34 percent of the changes in per capita income had been accounted for by the joint influence of companies' income tax, petroleum profit tax, value added tax, and customs and excise duties. The F-statistics value of 4.2447 and its corresponding p-value of about 5.17 percent implied that the model was not robust, in other words, it showed that the per capita income equation model had no good fit.

Table 6: Wald test of the long run joint significance of the model

Model Equation	Null hypothesis	F-statistics	P-value	Decision
PCI	C(14)=C(15)=C(16)=C (17)=C(18)=C(19) = 0	1.104452	0.5082	Accept H_0

Source: Researchers' E-views 10 Computation, 2020 (Extract from appendix, three)

From the above table, it could be seen that the null hypotheses for the model was accepted, meaning that there was no significant long run effect of companies' income tax, petroleum profit tax, value added tax, and customs and excise duties tax on per capital income. This conclusion was reached because the F-statistics value of the long run Wald test parameters for per capita income of 1.10445 with its corresponding probability values of 50.82 percent was found greater than 5 percent required for significance.

4.1.7 Long run test for reliability and stability of the estimates

To test whether or not the long run estimates of the results were reliable and stable, the study applied the Breusch-Godfrey serial correlation LM test, the normality test, the heteroskedasticity test and the CUSUM test. The results of these test were presented below:

Breusch-Godfrey serial correlation LM test

The Breusch-Godfrey serial correlation LM test is a test for reliability of the estimates of the parameters of the model. The null hypothesis of this test states that there is no serial correlation. Extract of the long run result

of the Breusch-Godfrey serial correlation LM test was presented in table 7 below.

Table 7: Breusch-Godfrey Serial Correlation LM Test:

Per capita income			
F-statistic	0.069697	Prob. F(2,1)	0.9368
Obs*R-squared	2.691503	Prob. Chi-Square(2)	0.2603

Source: Researchers' E-views 10 Computation, 2023

From this result, the observed R-square value of the per capita income equation of 2.691503 with it corresponding prob chi square (2) value of 26.03 percent, greater than 5 percent, implied that the null hypothesis no serial correlation for the per capita income equation was accepted, meaning that the long run per capita income equation was free from serial correlation.

Heteroskedasticity Test: Breusch-Pagan-Godfrey

TheBreusch-Pagan-Godfrey Heteroskedasticity test is a test for homoscedasticity of the estimates of the parameters of the model. The null hypothesis of this test states that the estimates are homoskedastic or that the model is not heteroskedastic. Extract of the result of the Breusch-Pagan-Godfrey heteroskedasticity test was presented in table 8 below.

Table 8: Breusch-Pagan-Godfrey Heteroskedasticity Test:

Per capita income			
F-statistic	0.508395	Prob. F(18,3)	0.8449
Obs*R-squared	16.56840	Prob. Chi-Square(18)	0.5529
Scaled explained SS	0.674216	Prob. Chi-Square(18)	1.0000

Source: Researchers' E-views 10 Computation, 2023

From table 8 above, the observed R^2 value of 16.56840 with its corresponding prob. Chi-square value of 55.29 percent, more than five percent, implied that the long run per capita income equation estimates were homoscedastic. In other words, the long run per capita income equation estimates were free from heteroscedasticity at 5 percent level of significance.

4.1.9 Histogram normality test

The histogram normality test is a test for the normality of the estimates of the model. The Jarque-Bera statistics was the basis for determining whether the residuals of the model were normally distributed or otherwise. The decision rule is that the probability of the Jarque-Bera statistics should be more than 5 percent for the residuals of the model to be normally distributed. This is because the null hypothesis states that the residuals of the model are normally distributed. The results of the normality test are shown in the figure 1 below.

Per capita income

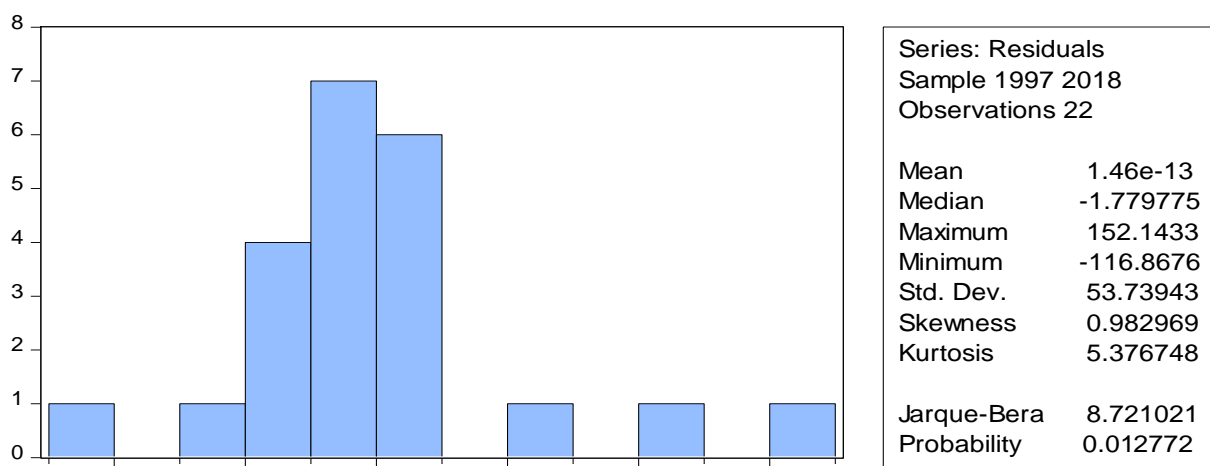|	
Series: Residuals	
Sample 1997 2018	
Observations 22	
Mean	1.46e-13
Median	-1.779775
Maximum	152.1433
Minimum	-116.8676
Std. Dev.	53.73943
Skewness	0.982969
Kurtosis	5.376748
Jarque-Bera	8.721021
Probability	0.012772

Figure 1: Normality test of long run model
Source: Researchers' E-views 10 Computation, 2023

The Jarque Bera statistics value of 8.721021 with its corresponding probability of 1.27 percent, less than 5 percent, meant that the residuals of the per capita income equation were not normally distributed.

4.1.10 CUSUM Test for stability analysis of long run model

The CUSUM test for stability analysis of the long run model was applied to test for the long run stability of the model. The requirement for stability is that the blue line be found in between the two red lines. In other words, the blue line should not touch any point in the two red lines. From the below result, it could be seen that the blue lines lied in between the two red lines. This meant that the estimates of the model were stable and reliable.
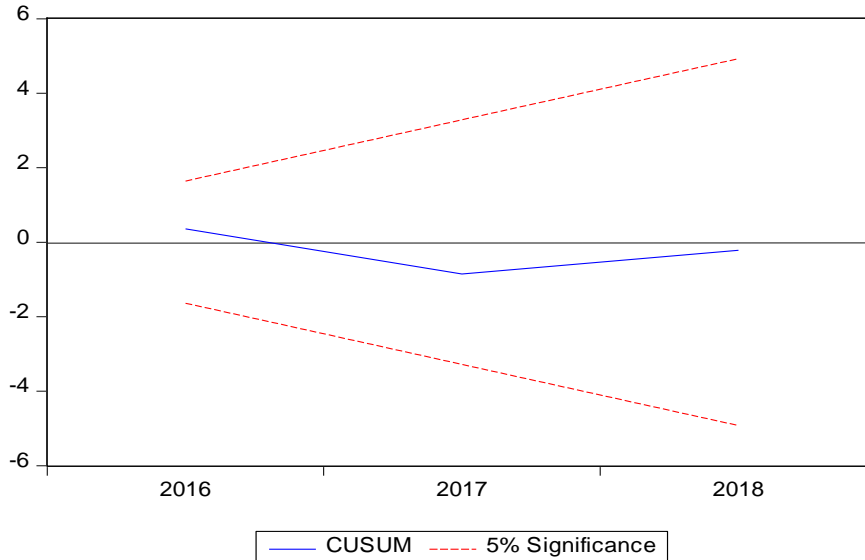
Per capita income

Figure 2: CUSUM Test for Stability analysis of the long run model
Source: Researchers' E-views 10 Computation, 2023

4.1.11 Analyses of short run dynamics

The results of the ARDL short run estimates of per capita income is presented and discussed in terms of their signs and magnitudes.this is captured in table 9 below.

Table 9: Short run dynamics of per capita income

Dependent Variable: D(PCI)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	59.11100	125.9444	0.469342	0.6514
D(PCI(-1))	-0.027742	0.357082	-0.077690	0.9400
D(PCI(-2))	-0.176618	0.353809	-0.499190	0.6311
D(LCIT(-1))	-62.71350	280.6210	-0.223481	0.8288
D(LCIT(-2))	-148.7707	312.1312	-0.476629	0.6464
D(PPT(-1))	1.362591	2.982305	0.456892	0.6599
D(PPT(-2))	-2.511266	5.553405	-0.452203	0.6631
D(VAT(-1))	-1.817574	2.668914	-0.681016	0.5151
D(VAT(-2))	4.529040	2.696357	1.679688	0.1315
D(EDT(-1))	0.657892	1.338553	0.491495	0.6363
D(EDT(-2))	0.866323	0.887946	0.975648	0.3578
D(CED(-1))	9.555685	5.673205	1.684354	0.1306
D(CED(-2))	-0.753019	7.234105	-0.104093	0.9197
ECM2(-1)	-0.414484	0.374770	-1.105969	0.3009
R-squared	0.671335			
Adjusted R-squared	0.537255			
F-statistic	1.256993	Durbin-Watson stat		2.324370
Prob(F-statistic)	0.383345			

Source: Researchers' E-views 10 Computation, 2023

An examination of table 9 showed that the signs of the parameter of the first and second lagged period of per capita income were negative. This implied that a one percent increase in the first and second lagged period of

per capita income led to about 2.77 percent and 17.66 percent decreases in the current period short run per capita income. Further examination of the table showed that companies income tax had negative effect on the current period per capita income. One percent increases in the first and second lagged periods of companies' income tax led to about 62.71 percent and 148.77 percent decreases in the per capital income in the short run. Petroleum profit tax had a positive effect on per capita income in its first lagged period but negative effect in its second lagged period. This implied a one percent increase in the first and second lagged periods of short run petroleum profit tax led about 136.25 percent increase and 251.12 percent decrease in current period short term per capita income. Value added tax in its first lag had a negative effect on per capital income but a positive effect in its second lag on short run per capital income. This conclusion was reached as the parameter of its first lagged period had a negative sign while that of its second lag period had a positive sign. One percent increase in the first and second lagged period of short run value added tax led to about 181.75 percent decrease but 452.90 percent increase in the current period short term per capita income in Nigeria. in its first and second lagged period had positive effect on per capita income in Nigeria. The implication of this was that a one percent increase in the first and second lagged period of led to 65.78 percent and 86.63 percent respective increase in the current period short run per capita income. Finally, the first and second lagged periods of customs and excise duties had a positive and negative effect on the short run per capita income in Nigeria respectively. This implied

that a one percent increase in the first and second lagged period short run customs and excise duties led to about 955.56 percent increase and 75.30 percent decreases in the current period short run per capita income.

The coefficient of the ECM measured the speed of adjustment of the error factor from short run disequilibrium to long run equilibrium. Theoretically, it is expected that the coefficient of the error term be negative and significant. Viewing the result, the coefficients of the error terms of the short run per capita income equation had negative values of -0.4144 with its corresponding p-values of 30.09 percent. Since the p-value of the error term was greater than 5 percent, it followed that it was insignificant, implying that the short run disequilibrium of the error factor did not adjust to a long run equilibrium.

The R^2 and R^2 adjusted values of 0.6713 and 0.5372 implied that the total variation in the observed behaviour of per capita had been jointly explained by the variations in companies' income tax, petroleum profit tax, value added tax, and customs and excise duties. The R^2 adjusted value of 0.5372 specifically showed that about 53.72 percent of the changes in per capita income had been accounted for by the joint influence of companies' income tax, petroleum profit tax, value added tax, and customs and excise duties. The F-statistics value of 1.2569 and its corresponding p-value of about 38.33 percent implied that the model was not robust, in other words, it showed that the per capita income equation model had no good fit.

Table 10: Wald test of the short run joint significance of the independence variables
Dependent variable: Per Capita Income (PCI)

Independent variables	Null hypothesis	F-statistics	P-value	Decision
LCIT	C (4) = C (5) = 0	0.113725	0.8939	Accept H_0
LPPT	C (6) =C (7) = 0	0.740399	0.5070	Accept H_0
LVAT	C (8) = C (9) = 0	2.084393	0.1868	Accept H_0
LCED	C (12) = C (13) = 0	1.492390	0.2813	Accept H_0

Source: Researchers' E-views 10 Computation, 2020 (Extract from appendix, seven)

From the above table, it could also be seen that the null hypotheses for companies' income tax, petroleum profit tax, value added tax and customs and excise duties were accepted. This was because their respective F-statistics values of 0.1137, 0.7403, 2.0843, and 1.4923 had probabilities values of 89.39 percent, 50.70 percent, 18.68 percent, and 28.13 percent respectively. This implied that there was no significant effect of companies' income tax, petroleum profit tax, value added tax, and customs and excise duties on short run per capita income in Nigeria. In other words, companies' income tax, petroleum profit tax, value added tax, and customs and excise duties do not have any significant effect on short run per capita income in Nigeria.

4.1.12 Short run test for reliability and stability of the estimates
To test whether or not the short run estimates of the results were reliable and stable, the study applied the Breusch-Godfrey serial correlation LM test, the normality test, the heteroskedasticity test and the CUSUM test. The results of these test were presented below:

Breusch-Godfrey serial correlation LM test for the short run estimates
The Breusch-Godfrey serial correlation LM test is a test for reliability of the estimates of the short run parameters of the model. The null hypothesis of this test states that there is no serial correlation in the short run estimates. Extract of the short run result of the Breusch-

Godfrey serial correlation LM test was presented in table 11 below.

Table 11: Short Run Breusch-Godfrey Serial Correlation LM Test:

Per capita income			
F-statistic	0.654042	Prob. F(2,6)	0.5534
Obs*R-squared	3.937812	Prob. Chi-Square(2)	0.1396

Source: Researchers' E-views 10 Computation, 2023

From this result, the observed R-square value of the per capita income equation of 3.9378 with it corresponding prob chi square (2) value of 13.96 percent, greater than 5 percent, implied that the null hypothesis no serial correlation in the short run per capita income equation was accepted, meaning that the short run per capita income equation was free from serial correlation.

4.1.13 Short Run Heteroskedasticity Test: Breusch-Pagan-Godfrey

TheBreusch-Pagan-Godfrey Heteroskedasticity test is a test for homoscedasticity of the estimates of the parameters of the model. The null hypothesis of this test states that the short run estimates are homoskedastic or that the model is not heteroskedastic. Extract of the result of the Breusch-Pagan-Godfrey heteroskedasticity test was presented in table 12 below.

Table 12: Breusch-Pagan-Godfrey Heteroskedasticity Test:

Per capita income			
F-statistic	0.361287	Prob. F(13,8)	0.9501
Obs*R-squared	8.138162	Prob. Chi-Square(13)	0.8345
Scaled explained SS	1.223002	Prob. Chi-Square(13)	1.0000

Source: Researchers' E-views 10 Computation, 2023

From table .12 above, the observed R^2 value of 8.1381 with its corresponding prob. Chi-square value of 83.45 percent, more than five percent, implied that the short run per capita income equation estimates were homoscedastic. In other words, the short run per capita income equation estimates were free from heteroscedasticity at 5 percent level of significance.

Short run histogram normality test

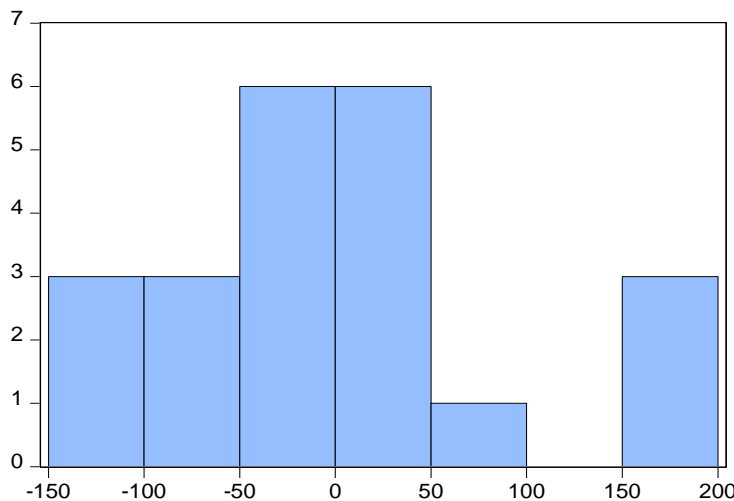The histogram normality test is a test for the normality of the estimates of the model. The Jarque-Bera statistics was the basis for determining whether the residuals of the model were normally distributed or otherwise. The decision rule is that the probability of the Jarque-Bera statistics should be more than 5 percent for the residuals of the model to be normally distributed. This is because the null hypothesis states that the residuals of the model are normally distributed. The results of the normality test are shown in figure 3 below.

Per capita income

Series: Residuals	
Sample 1997 2018	
Observations 22	
Mean	3.71e-15
Median	-15.14383
Maximum	197.6586
Minimum	-137.0323
Std. Dev.	89.65538
Skewness	0.778355
Kurtosis	3.272984
Jarque-Bera	2.289710
Probability	0.318270

Figure 3: Normality test of long run model

Source: Researchers' E-views 10 Computation, 2023

The Jarque Bera statistics value of 2.2897 with its corresponding probability of 31.82 percent, greater than 5 percent, meant that the residuals of the per capita income equation were normally distributed.

CUSUM Test for stability analysis of short run model

The CUSUM test for stability analysis of the short run model was applied to test for the short run stability of the model. The requirement for stability is that the blue line be found in between the two red lines. In other words, the blue line should not touch any point in the two red lines. From the below result, it could be seen that the blue lines lied in between the two red lines in the short per capita income equations. This meant that the estimates of the short run model were stable and reliable.
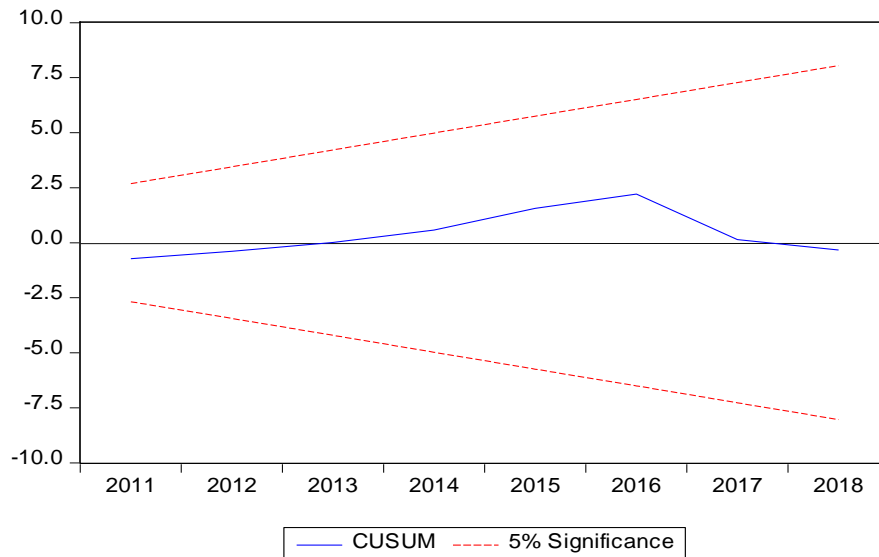
Per capita income

Figure 4: CUSUM Test for Stability analysis of the long run model
Source: Researchers' E-views 10 Computation, 2023

4.2 Test of hypotheses

4.2.1 Hypothesis one

H_{o1}: Companies income tax has no significant effect on per capita income in Nigeria;
H_1: Companies income tax has a significant effect on per capita income in Nigeria;

Decision Rule

Accept H_0: If calculated F-statistics value < Pesaran upper bound critical value
Reject H_0: If calculated F-statistics value > Pesaran upper bound critical value.

From the regression result,
Calculated F-statistics value = 0.1137
Pesaran upper bound critical value = 4.01

Since the calculated F-statistics value of 0.1137 was less than the Pesaran upper bound critical value of 4.01 at 5 percent significant level, the study accepts the null hypothesis and reject the alternative hypothesis. It therefore meant that companies income tax has no significant effect on per capita income in Nigeria.

4.2.2 Hypothesis two

H_{o2}: Value Added tax has no significant effect on per capita income in Nigeria;

H_1: Value Added tax has a significant effect on per capita income in Nigeria

Decision Rule

Accept H_0: if calculated F-statistics value < Pesaran upper bound critical value
Reject H_0: if calculated F-statistics value > Pesaran upper bound critical value.

From the regression result,
Calculated F-statistics value = 0.7403
Pesaran upper bound critical value = 4.01

Since the calculated F-statistics value of Ghana of 0.7403 was less than the Pesaran upper bound critical value of 4.01 at 5 percent level of significance, the study accepted the null hypothesis and rejected the alternative hypothesis. It therefore meant that value Added tax has no significant effect on per capita income in Nigeria.

4.2.3 Hypothesis three

H_{o3}: Custom and Excise Duties has no significant impact on per capita income in Nigeria;
H_1: Custom and Excise Duties has a significant impact on per capita income in Nigeria.

Decision Rule

Accept H$_0$: if calculated F-statistics value < Pesaran upper bound critical value

Reject H$_0$: if calculated F-statistics value > Pesaran upper bound critical value.

From the regression result,

Calculated F-statistics value = 2.0843

Pesaran upper bound critical value = 4.01

Since the calculated F-statistics value of 2.0843 was less than the Pesaran upper bound critical value of 4.01 at 5 percent level of significance, the study accepted the null hypothesis and rejected the alternative hypothesis. It therefore meant that Custom and Excise Duties had no significant impact on per capita income in Nigeria.

4.2.4 Hypothesis four

H$_{o3}$: Petroleum profit tax has no significant on per capita income in Nigeria;

H$_1$: Petroleum profit tax has a significant on per capita income in Nigeria.

Decision Rule

Accept H$_0$: if calculated F-statistics value < Pesaran upper bound critical value

Reject H$_0$: if calculated F-statistics value > Pesaran upper bound critical value.

From the regression result,

Calculated F-statistics value = 1.4923

Pesaran upper bound critical value = 4.01

Since the calculated F-statistics value of 1.4923 was less than the Pesaran upper bound critical value of 4.01 at 5 percent level of significance, the study accepted the null hypothesis and rejected the alternative hypothesis. It therefore meant that Petroleum profit tax had no significant on per capita income in Nigeria.

4.3 DISCUSSION OF FINDINGS

This study showed that in the long run tax revenue had an insignificant effect on human development in Nigeria. Specifically, findings showed that in the long run, companies' income tax, petroleum profit tax, customs and excise duties tax and value added tax had insignificant effect on per capital income proxy for human development. This implied that tax revenue in Nigeria has actually not been beneficial for inducing and sustaining long term development in Nigeria. This specifically could be attributable to the lack of long-term growth inducing investment. Many long-term projects in Nigeria funded by tax payers' money are rather abandoned or mismanaged; this actually makes these projects cost ineffective and often do not add up to long term human development in Nigeria. These findings is supported by Nwakanma and Nnamdi (2013) who examined taxation and national development from 1998-2012. The study sought to examine the effect of value added tax, petroleum profit tax and company income tax

on the human development index, number of schooling years and per capital income. The estimating technique was vector error correction. The study revealed that petroleum profit tax, company income tax and value added tax had insignificant impact on human development. Findings from this study also showed that there was no significant effect of tax revenue on per capita income in the short run. This findings is also supported by Okafor (2012) who examined tax revenue and economic development in Nigeria for the period 1986 -2010. The study modelled the petroleum profit tax (PPT), Companies' income taxes (CIT) and Tertiary education trust fund against human development index. Autoregressive distributive lag technique was applied in estimating the model. The analysis performed revealed that tax revenue has insignificant effect on human development index in Nigeria. These findings however contradicted Adam (2015) who examined the effects of tax revenue generation capacity on public spending in Sub-Saharan Africa drawing empirical lessons from three East African countries, Tanzania, Kenya and Uganda. It employs the co-integration and error-correction modelling framework to analyze the effects of erratic and inadequate revenue generation on physical and human capital development in Tanzania, Kenya, and Uganda using time-series data over the period 1970-2005. The results unambiguously demonstrate that changes in tax revenue have strong impacts on physical and human capital development spending in the three countries.

In summary, findings from this study showed that there was no significant effect of tax revenue on per capita income both in the short run and long run. Accordingly, short and long run increases in tax revenues do not in any way impact per capita income and by extension the standard of living of the people in Nigeria. The import of this is that tax revenues do not significantly contribute to national productivity. This could imply that tax revenues are rather invested in less productive ventures that do not support effective growth of the Nigerian economy both in the long run and short run. It could equally be due to low income generated as tax revenue which might not be sufficient enough for investment in projects that promised long terms sustainable returns to the Nigerian economy.

5. CONCLUSION AND RECOMMENDATIONS

This study examined the effect of tax revenue on human development using companies' income tax, petroleum profit tax, value added tax, and customs and excise duties tax to measure tax revenue per capita income as proxy for human development. The study applied the Auto Regressive Distributive Lag (ARDL) approach to estimate the study's parameters and the following major findings were made consequently.

i)   Tax revenue in the long and short run had an insignificant effect on human development in Nigeria.

ii) Companies' income tax revenue had no significant effect on per capita income in Nigeria, both in short and long run period.

iii) Petroleum profit tax revenue had no significant effect on per capita income in Nigeria, both in the short and long run period.

iv) Custom and excise duty tax revenue had no significant effect on per capita income in Nigeria, both in the short and long run period

v) Value added tax revenue had no significant effect on per capita income in Nigeria, both in the short and long run period

Going by the above analysis and findings, the study deduced that tax revenue in Nigeria is yet to sufficiently influence human development in Nigeria. In comparative terms and from the findings of this study both in the short run and long run, tax revenue had not attracted better gains to human development in Nigeria. In specific terms, in the short run company's income tax, petroleum profit tax, value added tax and custom and excise duties tax had not significantly influenced short run per capita income in Nigeria. It followed from the above therefore, that, the quantum of tax revenue in Nigeria has been too low to generate sufficient capital for investment in both the long run and short run for human development.

We will like to recommend as follows:

i) Government should invest tax revenue on the health system in terms providing adequate health infrastructures, provision of relevant and specialized manpower in the health sector, and provide adequate sensitization on healthy lifestyles that would promote increased life expectancy in Nigeria.

ii) Government should invest tax revenue in creating awareness on the benefits of early child enrolments in schools, provide adequate incentives to motivate teachers to deliver on the job and build conducive learning environments that will encourage students to engage in learning.

iii) Tax revenue should be invested in the provision of basic infrastructural facilities that will support businesses and attract direct foreign investments into the economy, so as to increase economic productivity that will ultimately lead to higher GDP growth.

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