

## GOVERNMENT FISCAL OPERATIONS AND SUSTAINABLE DEVELOPMENT IN THE PRE AND DURING SDGs ADOPTION ERA IN NIGERIA

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### ABSTRACT

*This study investigated the effect of government fiscal operations on achieving sustainable development in the pre and during sustainable development goals adoption era in Nigeria. Specifically, the study sought to ascertain if government annual expenditures and government annual revenue significantly affect the achievement of sustainable development in the pre and during sustainable development goals adoption era in Nigeria. The ex-post facto research design was adopted and a twenty (20) years period comprising 2005 – 2014 for the pre SDGs adoption era and 2015 – 2024 for the during the SDGs adoption era was covered. Results of the analysed data using inferential regression analysis statistical tool through e-view version 12 showed that government Annual Expenditures had positive effect on sustainable development in Nigeria in both era (the pre and during Sustainable Development Goals adoption era), though the extent of such effect was insignificant in the pre SDG adoption era but significant in the during the SDG adoption era (coefficients 2.053654 and 0.936303; p-values 0.2929 and 0.0025 versus 0.05 level of significance). It was also discovered that government Annual Revenues had negatively and insignificantly affected the sustainable development of Nigeria in the pre and during the SDGs adoption era (coefficients coefficient -2.393412 and -0.369653; p-values 0.2621 and 0.2310 respectively). On the basis of the findings the study concludes that there is a long run relationship between government fiscal operations and the achievement of sustainable development in Nigeria even though most of the elements of fiscal operation showed negative effect. Therefore, the study recommends that government expenditures in Nigeria should be tailored towards what increases the human development and based on well thought out budgets and not based on the whims and caprices of the Chief Executives. The budget should determine the expenditures. Unnecessary passage of supplementary budgets into law at the end of each year is quite unethical. Also, Taxation should be handled with tact and wisdom such that it is not used to kill ingenuity, kill innovation and drive away investment. The government and its agencies should focus more on service delivery, and not merely parading itself as revenue maximizer.*

**Key words:** Government annual expenditures, Government annual revenue, Government fiscal operation, Inclusive Wealth Index, Pre and During SDG adoption era, Sustainable development.

## INTRODUCTION

The most important and ambitious programme designed by the United Nations (UN) to tackle the myriads of problems that are confronting the world today is the sustainable development agenda; an agenda that has taken over and improved on the provisions of the previously pursued millennium development agenda. The sustainable development agenda is an improvement over the Millennium Development Goals (MDGs), in that the members of the United Nations took what worked and what did not work from the MDGs and used the lessons learnt to form the Sustainable Development Goals (SDGs) (Concern Worldwide, 2022). While the MDGs focused on tackling poverty, hunger and inequality, they did not address the root causes of those issues, but the SDGs have taken those drivers into account as barriers to development that must be prioritized (Gigliotti, Guido & Bastianoni, 2019; Concern Worldwide, 2022). The MDGs, with eight goals, were directed just towards the poor and developing countries whereas the current SDGs have 17 goals, 169 targets and 232 indicators covering almost all the world's perceived problems under the headings- the people, the planet, peace, prosperity and partnership which are denoted as the "five Ps" (Ryan, 2020).

Through the approved annual budget, relevant tiers of government indicate what to spend, how much to borrow to fund estimated expenditures, and sets policy priorities within their overall spending limit so as to drive the desired economic growth. Where such annual public fund outflows are well managed, it can position an economy rightly on the path of sustainable growth and development (Nwoye, Obiorah, & Ezenwafor, 2024). As such, at the introduction of SDGs, the UN emphasized that the sustainable development goals were designed to leave no one behind. This implies that all governments, civil society groups, corporate and unincorporated entities as well as the citizens are expected to participate in the SDG programmes (IBM, 2024).

Sustainable development goals originated from the concept of sustainable development which has a long history but was popularized in the 20<sup>th</sup> century by the Brundtland's definition of 1987 as a development that meets the needs of the present without compromising the ability of the future generations to meet their own needs. This definition contains two important concepts, the concepts of need and intergenerational equity (Joshi, 2018). Sustainable development does not require the cessation of economic growth, it recognizes that growth has

to be balanced, measured meaningfully and managed effectively. Discussions on sustainable development had appeared to be in the exclusive domains of economics and political science, but the accounting discipline has started to show interest in the concept bearing in mind that accounting actions both of the government, corporate firms and individual levels can have effect on the sustainable development of a country, no wonder Johnson, et al. (2021), define sustainable development as a process of building and managing a portfolio of assets including natural capital.

It is noteworthy that the people have entrusted much to the government and as a result, it is expected that the governments at all levels should lead from the front through its fiscal operations, annual activities and policies towards the achieving sustainable development. For instance, the economic policies of the Olusegun Obasanjo Regime between 1999 - 2007 appear to have ushered in some active moments in Nigeria's economic restructuring landscape (Nwoye, Obiorah & Ekesiobi, 2015) due to various result-driven public expenditures that were implemented, though not without several cases of corruption that marred the full actualization of these policies' intents/goals.

The roles of governments are to be multifaceted ranging from provision of peace and security, through policy formulations and implementation, public awareness, resources mobilization and deployment to accountability. The later roles can be discussed under the purview of government fiscal operations which involves: how the government raise its revenues, (sources, the laws, the adequacy), how the government carries out its expenditure (budgetary regulation, allocations between the capital and recurrent, the discipline in the expenditure, accounting and auditing), how the government manages its debts (types of debts, tenor, servicing obligations and compliance level, whether project tied or not) and the imminent role of the government in securing and sustaining Foreign Direct investment.

How these four cardinal fiscal operations of government are managed readily attests to how a nation can make or mar its efforts towards achieving sustainable development. This is because there is supposed to be a strong and crucial nexus between the government fiscal operations and the achievement of the sustainable development. For instance, Adelusi, et al (2025) noted that tax revenues and cost of governance affect sustainable development in Nigeria Ali-Momoh et al. (2025) demonstrated that compliance with budget and efficiency in government spending are prime drivers of sustainable development. Olaleye (2022) lend credence to this, pointing out that where government spending does not follow the plans and

priorities laid out by the legislature in a given budget, the achievement of sustainable development in any sector can be potentially undermined and grossly affected. For example, while overall government expenditure went from N4,712 billion in 2011 to N4,989 billion in 2015, N12, 081 billion in 2020 and then N14,393 billion in 2022. However, Nigeria experienced two recessions within this period: one in 2016 and another one in 2020. (Aderobaki & Falope, 2024) which may be because of bad design or poor implementation and in 2025 it budgeted ₦49.74 trillion for its operations

Nwoye, Obiorah and Ezenwafor (2024) clearly pointed out that the resuscitation, revival and expansion of any economy globally depends largely on how well this constitutional obligation of the government, here in this study referred to as fiscal operation, is deployed, managed and implemented. It is possibly in pursuant to this that in May 2023 that the federal government of Nigeria removed fossil fuel subsidies which accounted for US\$9.3 billion of spending, equivalent to over 15 percent of the national budget from the national budget, (PWC, 2023). It is pertinent to note that the fuel subsidies removal was a key component of the government's strategy for realigning public expenditures with sustainable development priorities. According to the government report, more public monies were spent on the fuel subsidy in year 2022 than was spent on education, health and infrastructures put together (PWC, 2023). The government was targeting an increase in revenue to reach 15 percent of gross domestic product (GDP) by year 2030. However, the extent of this achievement and the metrics for its measurement remain matters of great concern.

Between 2016 and 2024, Nigeria entered into two economic recessions and came out, but the apparent recovery from recessions pointed to mixed macroeconomic indicators; inflation was still high, the Naira was still very weak compared to other major currencies; public debt was still expanding, but the GDP was increasing. In August 2025, Nigeria rebased her GDP for the first time since 2014. This was done according to the National Bureau of statistics (2025) to ensure that national data reflected contemporary economic structure hence this rebasing brought into account such undercounted sectors like Fintech and the digital economy. The result produced a revised GDP of ₦372.8 trillion for 2024 that showed a 34.35% increase from the earlier estimate of ₦277.5 trillion, but how this translates to the well-being of the people and the real economy is subject to an in-depth study.

Given that the hallmark of achieving sustainable development requires balancing the economic, social and environmental programmes of government, and not mere concentration on one or two while neglecting the others, it is therefore important that a country's progress in sustainable development considers what happens in the economy, the environment and in the social sector. This, according to UNDP (2024) is because while economic growth is a key element in achieving sustainable development, many countries are resolute in moving beyond economic growth as a yardstick for measuring economic and revenue progress, particularly because, on the short run, growth tend to be an enabler of sustainable development, but on the long run, sustainable development tend to transform a nation's pattern of growth. In public sector accounting, emphasis has been concentrated on the accounting system prescribed by the System of National Accounting (SNA), but the SNA preceding the 2025 SNA is primarily concerned with economic performance and does not capture other dimensions of well-being such as social, environmental and non- economic factors that affect well- being. The Nigerian government has been spending money on projects and programmes purported to be towards the well-being of the people and sustainable development, and at the same pursuing aggressive revenue drive, borrowing from both the domestic and external lenders, while equally pursuing foreign direct investment inflow, but while these actions have succeeded in raising the GDP, the well- being of the country and the people cannot be said to be improving. It could be that the metric in use is not portraying the picture as it should be. Harris and Roach (2021) contend that taking natural capital and environmental quality seriously affects the way the measures of national income and financial cum revenue well-being is evaluated, especially as the overall financial well-being of a given people is usually dependent on many factors other than income level alone often measured as the gross domestic product (GDP). Hence, commitment to the achievement of sustainable development must be backed by means of measure of reliable progress made towards achieving realistic sustainability.

Other alternatives that people have advocated in the place of the GDP include the Gross National Happiness which is often associated with King Single Wangchuck of Bhutan; the Better Life Index, the Happy Planet Index, the Genuine Progress Indicator, the Inclusive Wealth Index of nations as propounded by the United Nations Environmental Programme (UNEP) and of course, the Adjusted National Savings (ANS) among others. This study, therefore, investigates the effect that government fiscal operations have had on the pursuit of sustainable development herein measured as the Inclusive Wealth in Nigeria, against the use of the conventional gross domestic product (GDP).

## **Objectives**

The main objective of this study is to investigate the effect of government fiscal operations on achieving sustainable development in the pre and during the sustainable development goals (SDGs) adoption era in Nigeria. Specifically, the study sought to:

1. determine if Government Annual Expenditures significantly affects sustainable development in the pre and during Sustainable Development Goals adoption era in Nigeria.
2. investigate if Government Annual Revenue significantly affects the sustainability development in the pre and during Sustainable Development Goals adoption era in Nigeria.

## **LITERATURE REVIEW**

### **Sustainable Development**

Sustainable Development(SD) as a concept has a long history that cannot be accurately recounted without fear of contradiction because nations of the World were developing individually at different rates. According to Sabau (2020), sustainability in development as a concept, started in the 18th Century in the German forestry circles when the country decided to look into sustainable harvests. Sabau, however describes the concept as a contested one in that both sustainability and development can have different interpretations by different people. It originated from agriculture, but current discussions are dominated by Economists, however, this concept should follow a multidisciplinary and interdisciplinary approach to take its pride of place in the modern world. “Sustainable development” is one of the most popular concepts used to advocate a holistic view of progress. Enel Group (2023) has defined it as learning to live within the limits of a single planet in a fair and dignified manner for everyone, without depleting the natural systems from which we draw resources and without exceeding their capacity to absorb the waste and refuse generated by our activities and without compromising the opportunities of either the present or future generations. Johnson et al. (2021), have define sustainable development as a process of building and managing a portfolio of assets including natural capital.



Since the Brundtland report (World Commission on Environment and Development, 1987) popularized the phrase as that development that meets the needs of the present generation without compromising the ability of the future generation to meet its own needs it has been reflected in many government policies, sparked activists' movements, generated private sector interest and has been institutionalized throughout various UN processes (UN,2020). For instance, in 2003 the Swedish government adopted sustainable development as an overall objective of government policy. In order to monitor progress toward sustainability objectives, an extensive database of environmental indicators is published on the Internet by Statistics Sweden. The government recognizes that no generally accepted set of indicators for sustainable development has been worked up yet, but Sweden is engaged in an ongoing effort to improve its environmental accounting, monitoring of environmental objectives, public health, green key ratios and index for development in the segregated districts of its metropolitan areas (Harris &Roach, 2021).

### **Measurement of Sustainable Development**

Good data and statistics are crucial to making progress judgement on Sustainable Development among nations (ODI, 2018 Such data help policy makers to identify challenges and gaps, enable the public to hold the governments accountable, allow for data-based and evidence-based decision making and equally help to identify best practices (OECD, 2020). This is more as the greatest mistake of policy makers is to judge policies and programmes by intentions rather than results. The goals and targets of SDG have been operationalized to reflect development in nations of the World by the gross domestic products (GDP) of nations. Gaukroger et al. (2022) discovered some shortcomings in the GDP metric and warned that it is no longer consistent to maintain growth as a societal goal or to keep GDP as the major reference for socioeconomic policies. According to them, what is measured affects what the society does. And the way such measurement is carried out is just as crucial because indicators intrinsically carry axiomatic and normative conceptions. This is as concern has also been raised over the use of GDP to assess national development. For instance, the United Nations (2022) states that while the GDP measures the production of goods and services, it does not capture how these goods and services are produced and distributed across society. This raises serious questions about the extent to which the GDP can be applied to understand other dimensions of development such as equality and a just distribution of resources.

### **The Inclusive Wealth Index**

The Inclusive Wealth Index (IWI) of the United Nations Environment Programme (UNEP) was developed in 1992 in response to the “Beyond GDP” movement, with the aim to measure assets that underpin a nation’s income flow (AfDB, 2024). It is designed to measure a nation’s wealth by considering not only its financial and economic assets but to include its capital stock made of human capital such as its human resources, their skills, education and competence level and their health conditions; natural capital that includes natural resources such as forests, minerals, water resources, and soil character; produced capital such as infrastructure, equipment, buildings. According to AfDB (2024), the uniqueness of the IWI arises from its stock-based (capital) approach in measuring national wealth, which is a base for the flow of goods and services that are important for the welfare of a nation’s people. The approach is contrasted—though complementary to—the flow-based measure of economic performance, that is, GDP, as the IWI measures the stock of capital that makes it possible to produce economic-flow outputs. Measuring inclusive wealth is a key to driving sustainable investments across all policy areas. As Dasgupta (2021) noted, judging whether the path of economic development...is sustainable requires nations to adopt “inclusive measure(s) of their wealth”.

### **Government Fiscal Operations and Sustainability Development**

The 2030 development Agenda made it clear that each country was responsible for its social and economic development and so governments were tasked to set their own national targets guided by the global goals (Moheildin et al., 2022). It is therefore not an overstatement to say that the government has the primary responsibility of implementing the SDGs and ensuring follow up and review over the 15years period covered by the agenda (Allen et al., 2018; Dalby et al, 2019). Public finance can affect the Sustainable Development by providing incentives for increased sustainable production or consumption patterns as well as through generating revenues that can be harnessed to finance the goals while reducing inequalities. Taxing and spending are intended to be jointly considered in order to provide a holistic assessment of the aggregate effect of the fiscal policy change on addressing inequalities (Moheildin et al,2022). Fiscal policies can simultaneously mobilize resources, reduce inequalities, promote sustainable consumption and production patterns (United Nations, 2021). Taxes and transfers are among the powerful instruments in the hands of government to tackle poverty and inequality (Lustig et al., 2020) which are among the issues of concern to the SDG.

Government fiscal operations is however not limited to taxing. It includes spending, transfers and borrowing. Fiscal operations of government have been described as taking and giving in that government can adopt a contractionary or expansionary fiscal policy measure depending on the nature of the developmental problem it wants to solve at a point in time. The fiscal actions of the Government influence the economy by changing the degree of borrowing and the repayment pattern, changing the level, rates and types of taxes, the direction, extent and composition of expenditure et cetera (Horton & El-Ganainy, 2022). Public finance experts have narrowed the diverse roles of government to be regulatory, allocative, distributive and stabilization roles which are designated as fiscal operations of the government.

### **Government Revenue and Sustainable Development**

Government revenue is the total government from all sources (taxes, levies, grants, contributions, royalties, fees and donations). Government revenue are usually divided into tax and non-tax, but another popular classification in Nigeria is between oil and non-oil revenues. In this study revenue is taken as total government revenue. The nexus between government revenue and sustainable development is a highly significant one. Government revenues should serve as the sources of financing the programmes targeted at achieving sustainable development in any nation. This effort, when eventually achieved, could also lead to increased government revenues. The sustainable development drive of any country involves a wide range of issues and priorities which can only be effectively tackled using money. However, the relationship between revenue effort and sustainable development attainment needs to be managed with care so that it does not become detrimental.

In Nigeria for instance, the main sources of government finance are taxes, tariffs fees, fines and other income generating activities. The prominent source of domestic revenue mobilization advocated by many authors is taxation (O'Hare & Hall, 2021; Kharas & McArthur, 2019). Revenue generation through taxation can be an effective way of raising finance for the pursuit of the sustainable development (Griffiths, 2018; United Nations, 2022). This may be based on the popular Kaldorian belief that good things come to nations who tax more. Taxation plays a vital role and countries cannot survive or be sustainable without taxes (Ajeigbe, Ganda & Enowkenwa, 2022). Countries that are poor in tax collection are likely to struggle to survive or cope with their various capital, developmental and recurrent expenditures (Galperova et al., 2021; Lagoarde-Segot, 2020). However, blind adherence to a push for more taxation is likely to have adverse consequences unless the international

community prioritises support for better systems rather than more tax collection because the two are not always compatible. History is replete with situations where high taxes have stalled consumption, investments, savings and work effort as well as result in loss of government revenue thereby hindering economic growth and development

According to the UN (2021) the mobilization and effective use of the domestic resources are central to the pursuit of sustainable development because a revenue source like taxation can help finance the achievements of inclusive and sustainable development in other ways. Intensive revenue drive, and utilization is a necessity for the achievement of the sustainable development. Irrespective of the various sources of finance that may be open to a government, much emphasis has to be placed on domestic resources. The USAID (2019) captures this view when it opines that while assistance from the United States and other developed countries has been instrumental in reducing global poverty, these contributions only fill a fraction of the funding gaps faced by the developing nations. For instance, every government regards tax revenue as a main and guaranteed source of revenue because government can tax anything it decides to tax but taxation can be a double edged sword if not properly managed. Pearce and Onyejekwe (2021) have criticized the Nigeria taxation system as being characterized with inadequate policies, gross abuses, persistent corporate scandals and continuous use of tax havens by the elites. Nigeria faces several handicaps in the its ability to mobilise enough finance that it needs for the pursuit of sustainable development and these range from unreliability of revenue forecasting, inflation, corruption, infrastructural deficits, multiple foreign exchange rates, and weak policy reform momentum among others (NINFF, 2022).

*H<sub>02</sub>: Government Annual Revenue did not significantly affect the sustainable development of Nigeria in the pre and during Sustainable Development Goals adoption era in Nigeria*

### **Government Expenditures Pattern and Sustainable Development**

Government expenditures, according to Ochinoyabo (2021), is the expenditure incurred by public authorities like Central, States and Local governments to satisfy the collective social wants of the people. The conventional classification of Government expenditures is into Capital and Recurrent expenditures, yet there could be a classification along sectoral lines such as administration, agriculture, public works, defence, environment, health and social services expenditures. It could also be classified along the line of items of expenditure: salaries and wages, acquisition of capital assets and investments, transfers, subsidies and

donations. In this work, we have taken the total government expenditure in a year as the variable.

In developing countries, government expenditure policies not only accelerate economic growth and promote employment opportunities, they are also capable of playing useful role in reducing poverty and inequalities which are desired elements of the sustainable development (Ochinyabo,2021). Kharas and McArthur (2019) reported that as at 2015, governments around the World were already spending approximately US\$21 trillion per year on SDG related sectors, and that this was likely to rise to US\$33trillion or more by year 2030 in constant dollar terms. Akenroye et al. (2018) upheld the importance of addressing the problem of policy prioritization and of leveraging existing budget resources for meeting these goals. Such funding frameworks are necessary to analyze pressing questions related to the effectiveness of public funding on existing government programs. For example: Do changes in the size and distribution of the budget (on existing programs) help, effectively, to close development gaps?

Keynesian economists believe that rising government expenditures should boost economic growth and economic growth is expected to result in reduced poverty in the country. One area of government expenditure that can foster sustainable development is expenditure in the areas of infrastructure. According to Davies, Nwankwo and Michaels (2019), infrastructures have been seen by many as a key element in driving development in any nation. In several articles, it has been strongly endorsed as a catalyst in the development and improvement of a nation especially in improving access to social, human, natural and financial asset to the less privileged in a nation. Babatunde (2018) views infrastructure as a physical and organizational structures and facilities considered crucial in ensuring the security of any nation, its public's health, safety and its economic growth. According to the Intelligence Unit of the Economist Magazine (2019), infrastructure plays a key role in all three dimensions of sustainable development namely the economy, the environment and society. And now, as the world seeks to meet ambitious targets, such as the SDGs (as set out in the global Agenda 2030) and the Paris Agreement on climate change, infrastructure is becoming more widely recognized as a critical factor.

When it comes to the economy, infrastructure dividends range from the jobs created during construction and maintenance to the ability for infrastructure to generate economic activity

(such as a bridge that links a rural village to urban markets). By connecting communities to cities, education and employment, infrastructure such as transportation and telecommunications underpins national economic goals. In protecting the environment, infrastructure assets play a key role in conserving natural resources and reducing the impact of climate change. Clean energy generation plants, for example, are critical in reducing dependence on fossil fuels. By taking cars off the roads, mass transit systems contribute to the reduction in pollution and generation of greenhouse gases. When equitable access is assured, society benefits from infrastructure since it delivers the services (such as power supplies, healthcare services and sewerage networks) that are essential for sustainable development (The Economist, 2019). However, infrastructural development can have its own hazardous effect on the environment if not well managed. Road construction opens the hinterland and exposes the communities to spillover effects of urbanization. Telecommunication sub stations have been alleged to discharge carcinogenic radiation. Carbon dioxide emission is the undesired consequences of certain consumption and manufacturing processes especially those that involve the burning of fossil fuel in the process of infrastructural development. Economic growth, Urbanization, technological progress and industrialization all affect carbon dioxide emission (Zhao & Liu, 2022).

*H<sub>01</sub>: Government Annual Expenditures has not significantly affected sustainable development in the pre and during Sustainable Development Goals adoption era in Nigeria*

## **Theoretical Review**

### **The Institutional Theory of Government**

The institutional theory has come a long way that it would not be incontrovertible to assign the origin to a particular author. The theory has passed through many stages: starting from the work of Classical Institutionalism, (Thorstein Veblen, John R. Commons, Wesley Mitchell), Organizational Institutionalism (Philip Selznick, James March & Herbert Simon) Neo-Institutionalism (John Meyer and Brian Rowan, Di Maggio & Powell, Richard Scott) and Contemporary Institutionalism (Paul Tracy, Nelson Philip). These different stages of the concept may have been the cause of the lack of universally accepted definition of the concept, however Gräbner and Ghorbani (2019) have been able to isolate some widely agreed upon attributes of an institution namely:

- a. Institutions are human-made and that they cannot exist outside the social sphere

- b. Institutions must be codifiable, that is; it must be possible to describe them in verbal or written form
- c. Institutions are usually considered systems of social structures. This means that institutions have various components that play distinctive, yet related roles
- d. Institutions should have two important ingredients: rules and norms.

While rules provide recipes to behave, thus lowering complexity of the decision problem faced by agents –norms provide motivation to follow an institution by relating them to values. Judging from these properties from the perspective of contemporary institutionalism institutions are seen as accepted practices and procedures that remove doubts and guide our daily activities (Samadi & Alipourian, 2021). The role of institutions in the development or otherwise of a country cannot be over-emphasised. The quality of institution is crucial to development of the sustainability agenda (Bota-Avram, et al ,2018; Sato, et al 2018, UN, 2018). We cannot talk of sustainable development without recourse to good governance, as good governance is a reflection of the institutions in a country. Castro and Lopes (2022) put it more succinctly by positing that resource curse is mainly driven by poor quality of governance because good governance can contribute to proper resource allocation which results in higher performance of the sustainable development goals.

Narh (2023) identified four conditions under which poor or weak institutions can lead to resource curse namely: Neglect or lack of broad-based planning, lack of a binding long-term national development policy, unfair or lack of natural resource benefit distribution regulation and lack of strict environmental regulation. Institution and its effect is not limited to the resource curse problem, it shapes economic outcomes, reduces uncertainty and reduces cost of transactions. There have also been separate studies on the impact of institutional quality and financial development on poverty reduction (Kaidi et al., 2019), institutional quality and inclusive growth (Ntow-Gyamfi et al., 2019) and institutional quality and natural resources rent (Khan et al., 2019) and the conclusions were that well-developed institutions and financial markets positively impact poverty alleviation, inclusive growth and natural resources rent. Institutionalists believe that institutions especially the government play very crucial and influential roles in shaping behaviours and social and economic outcomes in a given society hence it is believed by some that it is not weather, geography or culture that causes a country to fail, rather it is the man made political and economic institutions that underlie economic success or lack of it. The common institutional factors found in the

literature are those defined by the World Bank's World Governance Indicators (WGI) and Political Risk Services' International Country Risk Guide (ICRG). The WGI measures six institutional factors: the rule of law, regulatory quality, government effectiveness, voice and accountability, control of corruption and political stability. The ICRG measures five institutional qualities: bureaucratic quality, risk of expropriation, law and order, corruption and government repudiation of contracts. (Sanga & Aziakpono, 2023)

Strong institutions ensure rule of law, minimize corruption, create investment-friendly environment and contribute to economic diversification to reduce the resource curse (Henry, 2019; Narh, 2023) and encourages the attainment of the sustainable development goals. Where quality institutions are lacking, especially in resource abundant developing countries, the resource curse becomes inevitable (Dou et al., 2022). Again, where expert-oriented, but narrow-based planning strategy is employed in managing natural resource, and or in the absence of a binding long-term national development plan, the onset of resource curse is inevitable.

These institutional conditions encourage government unaccountability as they do not restrict policy makers against discretionary distribution of natural resource windfall, rent seeking, clientelism and corruption which contribute to poor economic development and growth. Also, inadequate regulations for a fair distribution of natural resource benefit and lack of strict environmental regulation tend to precipitate grievance-induced resource conflict and environmental degradation to invite the resource curse. Therefore, in analysing institutional quality, existing planning models, availability of binding development policy, windfall distribution and strict environmental regulations should equally be considered (Narh, 2023). This study takes a lot from the Institutional theory.

### **Empirical Review**

Nguyen and Ho (2025) examined the impact of government spending on sustainable development and the moderating role of financial development. Using data from 45 countries and covering the period 2002 to 2023 the researchers employed Panel-ARDL model with the PMG estimator. Robustness checks included CS-ARDL, FMOLS, DOLS, and MMQR. The dependent variable was sustainable development represented with the sustainable index whereas the independent variables were public spending, financial development, while control variables, were FDI, Governance quality (IQ), Education (EDU), Population growth

(POP). The findings confirmed a positive and significant effect of government spending on sustainability, which strengthened at higher sustainability levels. Financial development also enhanced sustainability but with diminishing returns. Notably, the interaction between government spending and financial development was negative and significant, suggesting that higher financial development weakens the positive impact of public spending. These results underscored the complex dynamics between fiscal policy and financial development in achieving sustainability. Policymakers should align government spending strategies with financial maturity to optimize sustainable development.

Odetola, Adekunle and Akinrinola (2025) evaluated government expenditures and economic development in for the period 1990 to 2023. While the GDP per capita was their dependent variable, government expenditures on education, health and agriculture were the independent variables. The statistical analysis methods were the multiple regression, the autoregressive distributed lag methods. Their observations were that government spending on education had a significant positive effect on GDP per capita, with an unstandardized coefficient of 0.186 and a p-value of 0.031. Conversely, government expenditure on health showed an insignificant positive impact, with an unstandardized coefficient of 0.062 and a p-value of 0.455. Government spending on agriculture was found to have a negative effect, but it was not statistically significant, with an unstandardized negative coefficient of 0.031 and a p-value of 0.403 and they concluded that increased investments in education, coupled with reforms in health and agricultural policies, are essential for promoting long-term economic development in Nigeria.

Halkos, Aslandis and Managi (2025) examined the comparative dynamics of three forms of capitals (human, produced and natural) in Greece in relation to European Union averages across the regional context. Applying repeated measures and the mixed ANOVA method on data from 1990 to 2020, the empirical results showed a consistent hierarchy of human capital > produced capital > natural capital with significant growth over time and pronounced regional disparities with Western and Northern Europe outperforming Southern and Eastern Europe in overall capital stock.

Adelusi, et al (2025) examined the relationship between tax revenue, good governance and sustainable development goals in Nigeria. Using a longitudinal design and with data sourced mainly from the CBN statistical bulletin and the Federal Inland Revenue Service bulletins for the period 2010 -2022. SDG as the dependent variable was represented with the GDP, cost

of governance was represented by government expenditure while with tax revenue represented government revenue and both were the two independent variables. Through graphs and charts, descriptive statistics were used to interpret the data gathered. The findings revealed that tax revenue and cost of governance affect Sustainable Development Goals for the sustainable development of Nigeria.

Adegbie, Olaniyan, Oluwagbade, and Awotomilusi (2025) evaluated the effect of fiscal tax revenue on sustainable infrastructural development in Nigeria covering the period 2011 to 2024. While sustainable infrastructure was the dependent variable, company income tax, petroleum profit tax, value added tax and customs and exercise duty were the independent variables. The inferential statistics tool employed was the OLS. The results showed that fiscal tax revenue is significantly relevant for sustainable roads and housing (Adj R<sup>2</sup>=0.8768, F(4,9) = 1.612, >0.05); had significant effect on sustainable education (Adj R<sup>2</sup>=0.8768, F(4,9)=24.15, p < 0.05); had significant effect on sustainable health care (Adj R<sup>2</sup>=0.8065, F(4,9)=14.55, p < 0.05) in Nigeria. The results also confirmed that fiscal tax revenue had significant effect on sustainable power (Adj R<sup>2</sup> ,0.6725 F(4,9) = 7.67.

Adenuga, Agbola, Mabinuori and Onifade, et al (2025) examined the influence of fiscal policy (debt and Taxation) on Nigeria's infrastructure development from 1990 to 2021. In the study, infrastructural development was the dependent variable, while national debt, tax components: PPT, TET, VAT, and CIT were the independent variables. On an analysis using the ordinary least square multiple regression, the results showed that National debt (DEBT) had a statistically significant beneficial effect on infrastructure development (IFRAC), as shown by a positive coefficient of 0.192057 and a probability of 0.0152. However, tax components (PPT, TET, VAT, and CIT) demonstrated a positive effect on infrastructural development as shown in the positive coefficients of (0.019125, 0.077520, 0.005462, -0.048860) respectively but they were insignificant as revealed by probability of (0.8088, 0.7622, 0.9503, 0.4556) respectively.

Olatunji and Omedero (2025) examined the nexus between taxation and sustainable development in Nigeria for the period 1994 to 2022. Sustainable development was represented with per capita income, whereas taxation was represented with such tax component as company income tax, petroleum profit tax and value added tax. The test was conducted using the Vector Error Correction Model. Findings showed that company income tax, petroleum profit tax, and value added tax positively and significantly impact per capita income.

Anyanwu, Ananwude and Okolie (2025) studied the effect of tax revenue on the economic development of Nigeria using data from 2000 to 2023. The proxy for economic development was the human development index, while the independent variables were petroleum profit tax per capita, company income tax per capita and value added tax per capita. After applying the OLS multiple regression in analyzing the data, the study observed that petroleum profit tax was, not positive and not statistically significant, valued added tax was positive but statistically not significant, and company income tax was negative and was also not significant statistically on their effect on human development index.

Ubali, et al (2024) empirically studied the impact of tax revenues and government expenditure on sustainable development goals in Nigeria using time series data that spanned from 2000 to 2021. In this study, SDG was the dependent variable and was proxied by the sustainable development index score of the country. The independent variables were tax revenues and government expenditures. First, descriptive statistics were employed for pre-estimation followed by Augmented Dick-Fuller (ADF) unit root test to establish the order of integration. Finally, the Vector Error Correction Model was employed to analyze the co-integrated variable and establish both the long run and short run relationship among the variables. The VECM results show that a positive long-run relationship subsisting between tax revenue and SDG index score, as well as a positive and significant relationship between government expenditure and SDG index score

Rahman (2023) carried a study to examine the impact of taxes on Sustainable Development Goals (SDGs) in the context of Organization for Economic Co-operation and Development (OECD) countries. This research used effective average tax (EAT), tax on personal income (TPI), tax on corporate profits (TCP), and tax on goods and services (TGS) as the variables of taxes, and employed secondary data from 38 OECD countries covering the period 2000–2021. The study also used Breusch-Pagan Lagrange Multiplier (LM), Pesaran Scaled LM, Bias-Corrected Scaled LM, and Pesaran Cross-unit root tests, and model selection tests were conducted before the focal part of the analysis. The research found that the corporate tax rate is positively and significantly associated with the sustainable development goals (SDG). The result implies that a higher rate of corporate tax plays vital role in achieving the sustainable development goals in the emerging economies. The study applied both individual effects and combined effects of corporate tax rate, personal income tax, sales tax, and effective tax rate with SDG. In both cases, the research found significant and positive association of taxation

with SDG. Thus, the study argues that achieving the SDG of emerging economies depends on the countries' taxation rate and policy sectional dependence (CSD) tests to analyze the existence of cross-sectional dependency. The results showed that EAT, TPI, TCP, and TGS are positively associated with SDGs. However, the change in TPI has a smaller effect on SDGs than the change in EAT or TCP or TGS. The result of panel causality indicated that EAT, TPI, and TGS have a unidirectional causal relationship with SDGs. The study also found that TCP has a bi-directional causal relationship with SDGs. Moreover, the finding indicated that the OECD countries need to focus on tax policies to achieve the 2030 Agenda for Sustainable Development. This study is based on the theory of optimal taxation (TOT), which suggests that tax systems should be designed to maximize social welfare.

Kabireu (2023) studied the influence of government expenditure on the no poverty (SDG 1) objective in Nigeria. Using a time series data of capital and recurrent expenditures, exchange rates, population growth and poverty rate for the period 1984-2020, the author carried out a three prong steps of: pre- estimation evaluation, determination of the stability of the variables using ADF unit root tests and finally applying the bound co-integration test and error correction model to find out the long and short run relationship between the variables. His observations were that actual capital expenditure budgeted recurrent expenditure and population growth were statistically significant in explaining changes in poverty whereas actual recurrent expenditure and exchange rate were statistically insignificant.

Badiru, Ademola and Mutiu (2023) investigated the impact of transport infrastructure expenditure on economic growth in Nigeria. The study categorized transport infrastructure expenditure into capital and recurrent. Annual time series data were utilized for the study and it spans from 1990 to 2020. The data were sourced from the World Development Indicators (WDI), Central Bank of Nigeria (CBN) annual reports, and statistical bulletin. The Johansen co-integration test and vector error correction model estimation techniques were employed. The findings from the co-integration test revealed that there are long-run relationships amongst the model's variables. Furthermore, the findings from the vector error correct model (short-run result) revealed that capital and recurrent transport infrastructure expenditure, government revenue, and exchange rate were found to adjust to long-run equilibrium at a speed of 24%. In addition, the short-run result revealed that there is no causality from capital transport infrastructure expenditure, government revenue, and exchange rate to economic growth in Nigeria while short-run causality existed from recurrent transport infrastructure

expenditure to economic growth in Nigeria. However, recurrent transport infrastructure expenditure exerts greater influence with 8.4% than capital transport infrastructure expenditure with 5.3% influence on economic growth in Nigeria during the study period.

Chen, Chen, Cheng and Yu (2023) studied the interlinkage between urbanization and sustainable development. To understand the interlinkages (synergies and trade-offs) between urbanization and the 17 UN SDGs, which involve 169 specific targets on the 2030 sustainable development agenda, the authors referred to Nerini et al.'s methodology to identify interlinkages with the SDGs (Fuso Nerini et al., 2018). The synergies and trade-offs were identified based on a literature review combined with a consensus-based assessment. The Google Scholar search engine was used to filter published research in peer-reviewed journals or authoritative public reports from official organizations (such as UN reports). The relevant arguments or descriptions of real-world experiences about the interlinkage between urbanization and the respective SDG in the above literature and reports were considered 'evidence' of the existence of the interlinkages (synergies or tradeoffs). They only considered whether an interlinkage occurred between urbanization and the specific targets in the SDGs; Potential interactions that determine whether the achievement of the SDG is closely related to or contributes to the achievement of another goal may occur. Moreover, the interlinkages between urbanization and the SDGs are fundamentally influenced by regional heterogeneity in geographic location, government governance, and science and technology. They considered three levels of interlinkages between urbanization and SDGs: interlinkage (+), strong interlinkage (++), and no interlinkage. These interlinkages indicate that urbanization could facilitate (synergies +) or disturb (trade-offs +) the achievement of a specific goal. Furthermore, a strong interlinkage means a closer direct actuation, which can be either positive or negative. For instance, strong interlinkage of synergies (synergies ++) with urbanization could directly create conditions that facilitate the achievement of a specific goal, and strong interlinkage of tradeoffs (trade-off ++) with urbanization indicating that urbanization might fail to achieve a specific goal or could even deteriorate it. The study revealed that there were synergies among 151 targets (89%) and trade-offs among 66 targets (39%) of the SDGs and Urbanization.

Singh, Singh, Alam and Agrawal (2022) carried out a research to empirically investigate the relationship between selected UN SDGs and GDP growth rate as a proxy for economic well-being in Saudi Arabia. They also investigated the role of education and training in achieving

SDGs in accordance with the Saudi Vision 2030, which places emphasis on the knowledge economy. This research employed multiple regression analysis to explore the relationship between the SDG variables and the GDP. The results show that education and training, gender equity/women's empowerment, greenhouse gas emissions, and decent employment are positively and significantly related to the GDP growth, whereas poverty, hunger, and health appear to be negatively related. The research indicates that education and training can promote economic, socioeconomic, and health goals without compromising environmental goals. Consequently, the authors recommend that the Saudi government should invest more in education and training to maximize synergies and minimize tradeoffs between the SDGs so as to help to promote sustainable employment generation, build human capital, improve socioeconomic empowerment through technology, and boost economic growth.

Musa and Ismail (2023) studied the impact of government expenditure on Nigeria's economic growth rate from 1970 to 2020. In this study, GDP was a proxy for economic growth, the dependent variable while government recurrent expenditures, government capital expenditures, government domestic debts were the independent variables. After converting the data to the log form and applying the ARDL test, the authors observed a positive link between the gross domestic product and recurrent government expenditure, a positive association between GDP and government capital expenditure, but a negative relationship existed between GDP Log and the first lag of capital government expenditure while the relationship between the log of the GDP and the log of the domestic debt's first lag was positive.

Guerrero and Casteneda (2022) studied the feasibility of the SDGs across 140 countries using the data from 2020 edition of the sustainability development report (SDR) and applying a simulation approach that was a bottom up approach which is designed to study how different budgetary allocations affect the simultaneous and interdependent evolution of a large set of development indicators. The model takes as inputs a vector with initial conditions for the indicators, a network with their interdependencies, a budget size, the fraction of positive changes in the indicators (as a measure of variation), and the final values they achieved in the last period of the sample. With this information, the parameters are calibrated to match the simulated and empirical indicators in their final observations, and match the fraction of positive changes. Their three main results are the following: first they provided estimates of the SDG gaps that might remain by 2030 if government programs were to be kept unaltered. Secondly, they showed that the sensitivity of these gaps vary—in diverse and non-linear ways

across countries and indicators—according to the amount of per capita government expenditure. Thirdly, they identified the maximum reduction that can be achieved for the SDG gaps by 2030 through sheer expenditure increments. That is to say, there are stringent ‘budgetary frontiers’ that cannot be overcome without addressing long-term structural factors (redesigning the government programs).

Olaide, Simo-Kengne and Uwilingye (2022) carried a study on the sustainable development and fiscal federalism nexus using a panel data set of 40 countries over the period 2006 to 2018. In this study the dependent variable is the sustainable development proxied by the National Sustainable Development Index (NSDI) whereas the independent variable was the fiscal federalism indicator represented by revenue decentralization and expenditure decentralization. Thirteen variables that form part of the sustainable development goals were used as control variables. Analysis was done through pairwise correlation and pooled OLS, fixed effect and random effect panel estimation and GMM. The results obtained from the study were that fiscal federalism had no significant impact on sustainable development on the aggregate, while it had a significant positive impact on economic development, it had no significant impact on the environmental, resource and social development components.

Using panel data from 95 countries from the period 1998 to 2019, Bletsas, et al (2022) studied the role of monetary policy, fiscal policy and institutional quality on CO<sub>2</sub> and greenhouse gas emission and showed that GDP growth increases CO<sub>2</sub> emission, while government spending and M3 growth help reduce emission.

Abubakar and Abdullahi (2022) examined what effect CO<sub>2</sub> emission had on economic growth in Nigeria. They studied data for the period 1980 to 2020 and applying the ARDL tests, they observed that a long term relationship existed among CO<sub>2</sub> emissions, economic expansion, financial development and energy use in which CO<sub>2</sub> emissions and financial development promoted economic growth over the long term.

Halim and Rahman (2022) examined the effects of the corporate tax rate on sustainable development in the BRIC and CIVETS countries. Their research employed a panel dataset for 2000-2021 years and applied panel data regression model to analyse the data. The study confirmed the results by checking the robustness through the fully modified ordinary least square and the dynamic ordinary least square panel estimate methods. Several tests like cross-sectional dependence tests.

Adewale, et al (2022) investigated the impact of tax components in achieving sustainable growth in Nigeria using time series data from 1987-2019. The proxy for sustainable growth was the GDP which was the dependent variable while the independent variables were various components of tax: Petroleum Profit Tax, Company Tax, Value Added Tax and Personal Income Tax. The study made use of a 2- stage econometric procedure. First, the Augmented Dickey-Fuller (ADF) test was undertaken to ascertain the order of integration of the variables, then the Auto Regressive Distributed Lag (ARDL) model was employed to account for a long-run and short-run relationship in the model. The Result indicated that Petroleum profit tax, Company Income tax and value added had a positive relationship with Real Gross Domestic product both in the short run and long run. While the relationship with Custom & Excise duties, Personal Income Tax and Real Gross Domestic Product on the other hand were negative.

O'Hare and Hall (2021) did a study on the impact of Government Revenue on the achievement of the sustainable development goals in which the independent variable was government revenue which was applied to model the effect on some SDG variables namely: basic water facilities, safe sanitation, schooling, and immunization. The study covered 217 countries and a period ranging from 1960 to 2000. An unbalanced linear panel data modelling technique and standard panel logistic function were adopted. The study found that as government revenue per capita was increasing the coverage of the SDG variable were increasing, but the Government Revenue-SDG effect varied by country.

Ochinyabo (2021) examined the Government expenditure pattern and its effect on achieving sustainable development goals in Nigeria. The findings were that recurrent expenditures were higher than capital expenditures and that economic and social service sectors expenditures were inadequate to foster any meaningful sustainable development. Osuji and Nwani (2020) examined the effectiveness of Government expenditure and sustainable development goals in Nigeria. Applying the vector error correction model on quarterly data from first quarter of 2000 to the last quarter of 2018, the authors observed a long run association between government expenditure and SDG indicators with mixed impacts: while Government expenditure reduced poverty, in the short run, it amplified it in the long run; it amplified health related SDGs, adversely affected environmental sustainability. Their conclusion is that the public sector lacks the capacity to attain the Sustainable Development Goals elements studied.

Alinska, et al (2018) investigated the capability of the public sector in driving sustainable Development in Poland between 1995 and 2015 using the classical linear regression model and the dynamic vector error correction models. They found that GDP growth in Poland was driven by the final consumption expenditure of households, total general government expenditure, and total general government revenue. Yet, variance decomposition result confirms a low share of total government expenditure in explaining changes in GDP. However, social spending and fixed investment expenditures actively propelled growth.

## **MATERIALS AND METHODS**

This study adopted the *ex-post facto* research design. This is so because this type of research design permits the use of publicly available and accessible data to events which have taken place, and as such, cannot be manipulated or altered by the Researcher. As a result, the association or relationship between the predictor variables and dependent variable is always the focal point of this research design towards giving Researchers concise understanding of the extent to which the predictive variables (government annual expenditures, and government annual revenue) which are proxies to the independent variable (government fiscal operations) explains the quality of variations the dependent variable (sustainable development) has witnessed before and during the SDGs adoption periods under consideration. And since this is a time series data, there is no need for sampling and sampling technique. The study is on Nigeria as a whole

Data were obtained from relevant reports and statistical bulletins of the World Bank, the Central Bank of Nigeria, the National Bureau of Statistics, and the United National Environmental Programme for various years by means of the “identify and extract” approach. Assuch, data on government annual expenditures and government annual revenue were extracted from the Central Bank of Nigeria Statistical Bulletins and the National Bureau of Statistics for various years. The data for Inclusive Wealth was extracted from the United Nations Environmental Programme (UNU-IHDP) report for various years. However, the study covered a period of twenty (20) years comprising 2005 – 2014 for the pre SDGs adoption era and 2015 – 2024 for the during the SDGs adoption era.

$$\text{Inclusive wealth} = \text{HC} + \text{PC} + \text{NC} \dots \dots \dots \text{Eqn 1}$$

where:

HC = human capital.

PC = produced capital.

NC = Natural capital

Inclusive wealth index = Inclusive Wealth +exogenous adjustments (Carbon damages including blue carbon accounting, Oil capital gains, Total factor productivity (UNEP, 2023). A positive change in inclusive wealth indicates a positive change in human well-being. A country's inclusive wealth is the social value (not dollar price) of all its capital assets, including natural capital, human capital and produced capital. A positive change in inclusive wealth signifies positive well-being across generations (UN, 2022). Countries' inclusive wealth and inclusive wealth index data are available on UNU-IHDP website.

This study was adapted to the pattern in the model estimated by Alinska et al. (2018) represented as  $GDP = \alpha_0 + \beta_1 GGR_t + \beta_2 TGGE_t + \beta_3 GGGD_t + \beta_4 GFCF_t + \beta_5 GDERD_t + \beta_6 GGST_t + \beta_7 FCEH_t + \xi_t$ .....Eqn 2.

But in view of the choice of the explanatory variables, the proxies to fiscal operations of government (FOG) was reduced to only two variables amidst the introduction of a moderating variable even as the sustainable development was measured with the Inclusive Wealth Index (IWI). As a result, the model was restated to suit the intent of this study for the pre SDGs adoption era and during the SDGs adoption era.

For the pre SDGs adoption period, the study applied the following model as estimated:  $IWI_{it} = f(GAE, GAR)$  which can now be translated into the following econometric equations:  $IWI_{it} = \alpha_0 + \beta_1 GAE_{it} + \beta_2 GAR_{it} + \mu_{it}$  .....Eqn 3

However, the model for during the SDGs adoption period was estimated as:  $IWI_t = \alpha_0 + \beta_1 GAE_t + \beta_2 GAR_t + \mu_{it}$  .....Eqn 4

Where:

IWI = Inclusive Wealth index (proxy to the dependent variable).

GAE = Government annual expenditures (proxy to the independent variable).

GAR = Government annual revenue (proxy to the independent variable).

$\beta_0 - \beta_6$  = regression Coefficient.

$\mu$  = Error Term.

t = Time (post adoption period).

it = Time (pre adoption period).

Data extracts were subjected to descriptive tests to measure central tendencies such as mean, mode, median, kurtosis as well as measures of variability, and then inferential tests to make decisions and conclusion using the econometric view version 12.

## RESULTS AND DISCUSSIONS

### Descriptive Statistics

Table 1 Descriptive statistics of LAIW, LGAR, LGAE.

	<b>LAIW</b>	<b>LGAR</b>	<b>LGAE</b>
Mean	11.3703	8.21062	8.09425
Median	11.4886	8.68711	8.49597
Maximum	13.3405	9.26908	9.89386
Minimum	9.07008	5.78167	5.20516
Std. Dev.	1.39355	1.13543	1.43107
Skewness	-0.3518	-1.2322	-1.0152
Kurtosis	1.55294	2.8712	2.7082
Jarque-Bera	4.20738	9.89572	6.83772
Probability	0.12201	0.0071	0.03275
Sum	443.44	320.214	315.676
Sum Sq. Dev.	73.7955	48.9892	77.8228
Observations	39	39	39

Source: e-views 12 output.

In Table 1, LAIW, LGAR, and LGAE are negatively skewed. The kurtosis compared distribution of the variables with that of Gaussian distribution. A kurtosis of 1.55294, 2.8712 and 2.7082 implied that inclusive wealth, government annual revenue and government annual expenditures' individual kurtosis is less than 3 which means that the distribution is flat (platykurtic) relative to normal.

In terms of value LAIW had its lowest value of 9.070078 in 2005S1 with maximum value of 13.34050 in 2023S1. LGAR was highest in 2023S1 with a value of 9.269081 and lowest in 2005S1 with a value of 5.781669. LGAE had its least value of 5.20160 in 2005S1 with maximum value of 9.893861 in 2023S1.

### Chow test

The variables were subjected to Chow test to determine whether there is a structural break between groups or time periods in the model. The Chow test result are in Table 2:

Table 2: Chow Breakpoint Test Result

Chow Breakpoint Test: 2015S1

Null Hypothesis: No breaks at specified breakpoints

Varying regressors: All equation variables

Equation Sample: 2005S1 2024S1

F-statistic	4.031984	Prob. F(6,27)	0.0052
Log likelihood ratio	24.95004	Prob. Chi-Square(6)	0.0003
Wald Statistic	24.19190	Prob. Chi-Square(6)	0.0005

The Chow Test result in table 2 showed that there is a structural breakdown on the model because the F-statistic revealed a significant probability value. Hence, the study rejects the null hypothesis of no breaks at specified breakpoints. This implies that the study will split the sample at breakpoint which is 2015 and estimate the model separately for pre and post break point. As a result, further investigation on the effect of inclusive wealth on government fiscal operations was tested on the pre and post breakpoint periods data using the Ordinary Least square model

Table 3: OLS Test Results (pooled samples)

Variables	Coefficient	Std. Error	T- statistic	Probability
LGAR	-4.388910	0.702383	-6.248597	0.0000
LGAE	3.911346	0.646854	6.046726	0.0000
C	20.94304	2.262664	9.255923	0.0000

R<sup>2</sup> 0.798226, Adjusted R<sup>2</sup> 0.767654, F-statistic 26.10988, Prob.(F-statistic) 0.000000, DW 0.964060 (see appendix).

The estimated OLS model shown in Table 3 revealed that the logged values of government annual expenditure had a significant positive coefficient. However, government annual revenue had a significant negative coefficient.

### Test of Hypotheses

#### Estimation of OLS Model Result for the Pre period of 2005 to 2014.

Table 4 : Ordinary Least Square result for Pre breakpoint era.

Variables	Coefficient	Std. Error	T- statistic	Probability
LGAR	-2.393412	2.048307	-1.168483	0.2621
LGAE	2.053654	1.879270	1.092793	0.2929
C	18.63595	8.405380	2.217145	0.0437

R<sup>2</sup> 0.493481, Adjusted R<sup>2</sup> 0.312581, F-statistic 2.727923, Prob.(F-statistic) 0.063512, DW 1.062476

The estimated OLS model in Table 4 revealed R-square and adjusted R-Square of 0.49 and 0.31 implying that 49% and 31% of the variations of sustainable development (as measured with Inclusive Wealth Index) in the pre SDGs adoption era (2005 – 2014) was explained by the predictive variables of government fiscal operations such as government annual expenditures and government annual revenue. Moreso, the logged values of government annual expenditure had insignificant positive coefficients (Coefficient 2.053654; p-value 0.2929 which is greater than 0.05). However, government annual revenue, had insignificant negative coefficients (Coefficient -2.393412; p-value 0.2621 which is greater than 0.05).

### **Estimation of OLS Model Result for the Post period of 2015 to 2024.**

Table 5: Ordinary Least Square result for Post breakpoint era.

<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>T- statistic</b>	<b>Probability</b>
LGAR	-0.369653	0.294132	-1.256761	0.2310
LGAE	0.936303	0.250966	3.730795	0.0025
C	7.357339	0.971790	7.570915	0.0000

R<sup>2</sup> 0.955369, Adjusted R<sup>2</sup> 0.938203, F-statistic 55.65485, Prob. (F-statistic) 0.000000, DW 0.862776.

The estimated OLS model in Table 5 revealed R-square and adjusted R-Square of 0.955 and 0.938 implying that 96% and 94% of the variations of sustainable development (as measured with Inclusive Wealth Index) in the during the SDGs adoption era (2015 – 2024) was explained by the predictive variables of government fiscal operations such as government annual expenditures and government annual revenue. Moreso, the logged values of government annual expenditure had significant positive coefficients (Coefficient 0.936303; p-value 0.0025 which is less than 0.05). However, government annual revenue, had insignificant negative coefficients (Coefficient -0.369653; p-value 0.2310 which is greater than 0.05).

### **Hypothesis One**

H<sub>01</sub>: Government Annual Expenditures has no significant effect on sustainable development in Nigeria in the pre and during the Sustainable Development Goals adoption era.

H<sub>i1</sub>: Governmental annual Expenditures has significant effect on sustainable development in Nigeria in the pre and during the Sustainable Development Goals adoption era.

The estimated OLS model test result of the pooled samples comprising the pre and post SDG adoption era as shown in Table 3 clearly revealed that the logged values of government annual

expenditure (LGAE) had a significant positive coefficient of 3.91145 and p-value of 0.0000 which is a positive, amidst having statistically significant effect. This affirms that government annual expenditures had significant effect on the sustainable development in Nigeria. However, the need to statistically confirm whether to rely on the OLS test result of the pooled samples comprising the pre SDG era and SDG adoption era, or to perform a separate linear OLS regression test for each of the SDG adoption era led the study to conduct a test known as Chow Test. The goal of applying Chow test is to determine if it is appropriate to utilize the OLS test result of the pooled samples as it is for decision or findings purposes, or to split the sample at breakpoint which is 2015 and estimate the OLS model separately for pre SDG breakpoint (2005 – 2014) and during the SDG break point (2015 – 2024) for decision or findings purposes.

Looking at Chow test result in Table 2 which showed that there is a structural break on the model because the p-value of the F-statistic (0.0052) which is less than 0.05, revealed a significant probability value. Hence, the study rejects the null hypotheses of “no breaks at specified breakpoints” which implies that the pooled sample OLS test result should not be used. Therefore, the study proceeded to split the sample at breakpoint which is 2015 and estimate the model separately for pre and during break point. This practice also aligns with the actual intent of the study (to make comparison on the performance of government fiscal operations on SDGs in the pre and during the adoption era).

Tables 4 and 5 respectively showed that while the government annual expenditures (LGAE) had a strong, positive but insignificant effect on sustainable development in Nigeria (coefficient 2.053654; p-value 0.2929) in the pre SDG adoption era, it (LGAE) maintained a positive statistically significant but not so strong effect on sustainable development in Nigeria in the “during” SDG adoption era (coefficient 0.936303; p-value 0.0025). This implies that the implementation of the SDGs since its adoption in Nigeria in 2015 has had a level of effect on the sustainable development of the nation even though the extent of such impact has not been so strong between 2015 and 2024.

**Decision:** Accept the null hypothesis if the p-value is greater than 0.05, otherwise reject and accept the alternate hypothesis. Since the p-values obtained in both era are greater than 0.05 (0.2929 in the pre SDG adoption is greater than 0.05, while during the SDG adoption era, p-value 0.0025 is less than 0.05), the study concludes that Government Annual Expenditures had positive effect on sustainable development in Nigeria in both era (the pre and during

Sustainable Development Goals adoption era), though the extent of such effect was insignificant in the pre SDG adoption era but significant in the during the SDG adoption era (coefficients 2.053654 and 0.936303; p-values 0.2929 and 0.0025 versus 0.05 level of significance).

This result supports the Keynesian economic theory which, although did not mention sustainable development, holds that government expenditures are capable of stimulating demand, correcting market failures and expanding inclusive wealth especially during recessions and pandemics because during these crises periods the absence of a coordinated government expenditure will spell more hardship and poverty to the people. Between 2005 and 2024 there were up to eight major reported flood disasters in Nigeria in which the government took steps to intervene and cushion the effect on the victims. According to Ajayi (2025) the Federal government spent ₦17.6 billion as emergency disaster relief towards the 2012 flood disaster, much more was spent on the 2022 flood disaster. The government also spent heavily to contain the Ebola virus spread of 2014, the Covid-19 outbreak of 2020 and other similar emergencies. It is however true that a government might be spending without the desired prudence and justification ought to contribute to sustainable development. Government expenditures include such payments as petroleum subsidy payments which have been shrouded in controversies and fraud. For instance, according to the Nigerian Extractive Industry Transparency Initiative (NEITI) the amount of subsidies paid by the government between 2005 and 2023 total over ₦21trillion, but this colossal amount added little or no value to the lives of the people (The Cable,2023). The intention of introducing subsidy may have been good, but the payment process was fraudulent and ended up diverting the money meant for other programmes into the hands of a few individuals. According to the Vanguard newspaper report of September, 2025

Nigeria has spent ₦981.5 billion in conducting seven polls in 24 years making the Nigerian elections among the costliest in the world, but with questionable results. Cases of embezzlement and misappropriation, from the Ministries, Departments and agencies up to the Central Bank. All these shut the deserving areas out from getting the needed funds for sustainable development. Institutional weaknesses make the gatekeepers to government expenditures to be unable to enforce strict discipline over expenditures.

### **Hypothesis Two**

H<sub>02</sub>: Government Annual Revenues have not significantly affected the sustainable development of Nigeria in the pre and post Sustainable Development Goals adoption era.

H<sub>a2</sub>: Government Annual Revenue has significantly affected sustainable development of Nigeria in the pre and during Sustainable Development Goals adoption era.

In Table 3, the estimated OLS model test result of the pooled samples comprising the pre and during the SDG adoption era showed that the logged values of government annual revenue (LGAR) had a strong statistically significant but negative effect (coefficient of 4.388910 and p-value of 0.0000). This affirmed that Government annual revenue had negatively affected the sustainable development in Nigeria such that the extent of such negative effect is considered very strong and statistically significant. However, the need to statistically confirm whether to rely on the OLS test result of the pooled samples (comprising the pre and during the SDG adoption era) as in Table 3 or to perform a separate linear OLS regression test for each of the SDG adoption era led the study to conduct another test known as Chow Test (2015 – 2024) for decision or findings purposes.

Looking at Chow test result in Table 2 which showed that there is a structural breakdown on the model because the p-value of the F-statistic (0.0052) which is less than 0.05, revealed a significant probability value. Hence, the study rejects the null hypotheses of “no breaks at specified breakpoints” which implied that the pooled sample OLS test result should not be used. Therefore, the study proceeded to split the sample at breakpoint which is 2015 and estimate the model separately for pre and post break point. This practice also aligns with the actual intent of the study (to make comparison on the performance of government fiscal operations on SDGs in the pre and post adoption era).

The distinct OLS regression results of the pre and post SDG break points on Tables 4 and 5 respectively showed that government annual revenue (LGAE) had a negative and insignificant effect on sustainable development in Nigeria (coefficient -2.393412 and -0.369653; p-values 0.2621 and 0.2310 respectively) in the pre and during the SDG adoption era respectively. This implies that the annual revenue of Nigerian government in the pre and during the SDG era was not adequate to fund the implementation and achievement of the SDGs, thus having a negative effect on the nation’s general development between 2005 and 2024.

**Decision:** Accept the null hypothesis if the p-value is greater than 0.05, otherwise reject and accept the alternate hypothesis. Since the p-values obtained in both eras are greater 0.05, we conclude that Government Annual Revenues had negatively and insignificantly affected the sustainable development of Nigeria in the pre and during the SDGs adoption era (coefficients coefficient -2.393412 and -0.369653; p-values 0.2621 and 0.2310 respectively).

This finding is however inconsistent with the discoveries of Ubali, et al (2024) but finds credence in the words of the Leviathan hypothesis as well as the criticisms of Pearce and Onyejekwe (2021). Taxation is a veritable source of government revenue, while other sources include fines and fees, earnings from commercial undertakings of government. Sad enough, Nigeria tax system is characterized by double taxation and unguided adherence to tax as a source of revenue can be counterproductive, because history abound of situations where taxation has proven to stifle investment and development. Apart from the above, it also doubtful if the entire revenue that accrues to the government reaches the government coffers. The government has been worried about revenue leakages and poor accountability. This prompted it to adopt and implement the Treasury Single Account policy (TSA) initiative of the Goodluck Jonathan administration, but the extent to which the policy has forestalled revenue leakage and other revenue fraud is remains unverified. Furthermore, more efforts have n=been geared up to forestall the problems prevalent in the Nigeria tax system through enactment of a new Tax Act known as the Nigeria Tax Act ,2025 which took effect from January 2026. The effect will be noted by future research when it becomes operational.

## CONCLUSION AND RECOMMENDATION

On the basis of the findings the study concludes that there is a long run relationship between government fiscal operations and the achievement of sustainable development in Nigeria even though most of the elements of fiscal operation showed negative effect.

Based on the findings made, the study recommended that:

1. government expenditures in Nigeria should be tailored towards what increases the human development and based on well thought out budgets and not based on the whims and caprices of the Chief Executives. The budget should determine the expenditures, but what we see in Nigeria is that expenditures induce budgets yearly. Unnecessary passage of supplementary budgets into law at the end of each year is a typical example.

2. Taxation is an effective way of increasing government revenue and sustainable development. However, it should be handled with tact and wisdom such that it is not used to kill ingenuity, kill innovation and drive away investment. The government and its agencies should focus more on service delivery, and not merely parading itself as revenue maximizer. It is hoped that the new tax regime that will take effect from January 2026 will address the shortcomings of the previous tax regimes.

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