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Comparative Effect of Tax Revenue on Economic Growth of Selected African Countries

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Abstract: Tax revenue is often seen as a substitute of sustainable financing within a steady and predictable fiscal setting to promote economic growth and guarantee government financing of social and infrastructural needs of the citizenry. The objective of the study is to examine the effect of tax revenue on economic growth of ten selected countries from the five sub-regions of Africa such as West Africa, Southern Africa, North Africa, Eastern Africa and Central Africa. The study applied multiple OLS regression techniques as a statistical tool of analysis. The study reveals CIT, PIT, CED and VAT as a whole do not significantly affect the GDP of Botswana, Cameroun, Tunisia, DR/Congo, Egypt, Ghana, Kenya, Nigeria, and Uganda. On the contrary, CIT, PIT, CED and VAT as a whole have significant effect on gross domestic product of South Africa. The study recommended among others that African countries should introduce and maintain policies that will boost the continual and sustainable growth in tax revenue from custom and excise duty, personal income tax, company income tax and value added tax which are progressive in nature and ensure that tax revenue generated are adequately utilized to ensure sustainable economic growth.

Keywords: Economic Growth, Gross Domestic Product, Tax Components, Africa

I.   Introduction

Tax revenue is a genuine tool in the hand of government for the expansion of economic growth through the delivery of critical infrastructure and social amenities for the wellbeing of the citizenry. Tax revenues help governments globally to discharge its core mandates of (a) protecting the society from violence and invasion of other independent societies through military forces (b) guaranteeing protection of every member of the society from injustice and oppression of every other member through administration of justices (c) establishing and maintaining public institutions and public works which cannot be expected that any individual, or few number of persons, should establish or maintain because of huge capital outlay required (Abiola & Asiweh, 2012; Appah & Eze, 2013). Developed countries globally have been found to have relatively felt the impact of tax revenues generated through efficient and effective tax system, the controversies notwithstanding (Joseph, Omeonu & Ngaonye, 2018).However, taking a critical look at the huge benefits of tax revenue based on theoretical literatures, the need to ascertain its effect on economic growth of African countries becomes very imperative. Again the vulnerability of the revenues generated from crude oil and other unprocessed natural resources in Africa is a wakeup call for African countries to gear effort towards alternative sources of revenue. This alternative source of revenue is tax revenue and for this reason its impact should be determined precisely.

The argument regarding the effect of tax revenue economic growth is still raging because of divergent results based on various empirical studies by researchers. Many empirical studies show disaggregated and conflicting findings in relation to the effect of tax revenue on economic growth. Some empirical studies that show positive effect of tax revenue on economic growth are as stated below among others; Ihendinihu, Jones and Ibanichuka (2014); Eke, Ekwe and Ihendinihu (2018); Nwawuru, Nmesirionye and Ironkwe (2018); Nmesirionye, Nwawuru and Ekwuruke (2018); Babatunde, Ibukun and Oyeyemi (2017); Ogbonna and Ebimobowei (2012). Some empirical studies that show negative effect of tax revenue on economic growth included but not limited to thus: Joseph, Azubike, Tapang & Dibia (2018);

Kaibel and Nwokah (2009); Micah, Chukwumah and Umobong (2012). A negative nexus was reported in similar studies carried out by Keho (2013) and Saima *et al.,* (2014). McBride (2012) stated that progressive taxation diminishes investment, risk taking and entrepreneurial activity because more than proportionate portion of high income earners earnings are collected via tax returns.

In consideration of the conflicting findings regarding the effect of tax revenue holistically on economic growth of African countries, this study is motivated and it seeks to advance investigation on the actual effect of tax revenue on economic growth of African some selected countries, thus would solve the problem of disaggregated and conflicting findings once and for all. To achieve this, the study examined the collective effect of the tax components captured in the study to help to ascertain the extent of effect they have on the economic growth of the chosen countries of Africa with a view to recommending most suitable fiscal policy options.

For these reasons, the study adopted change in gross domestic product (ΔGDP) as dependent or response variables and independent or explanatory variables include Companies Income Tax (CIT), Personal Income Tax (PIT), Custom, Excise Duties (CED) and Value Added Tax (VAT). The study would compare the effect of tax components on various countries selected with the ultimate intent of identifying which of the tax components that have the potentials of enhancing rapid economic growth and also the tax component that does not contribute to the economic growth of African countries. Based on the outcomes, policy makers in Africa would be advised. The proxy variables adopted for this study have been used to study the effect of tax revenue on economic growth of African sub-regions in recent times but have not been used to study the effect of various tax components on African countries. The population of the study is African economy and sample size is ten (10) selected African nations chosen based on World Population Review (2019) GDP ranking and availability of data. The countries are also picked to replicate various regions of the continent. The study covers a period is 38 years, that is, 1980 - 2018.

1.1   OBJECTIVES OF THE STUDY
The main objective of the study is to examine the effect of tax revenue on economic growth of some carefully chosen African countries.In specific terms, the objectives are to:
i.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of Botswana
ii.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of Cameroun.
iii.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of Tunisia.
iv.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and   excise duties and value added tax) on Gross Domestic Growth of DR Congo.
v.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of Egypt
vi.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of Ghana.
vii.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of Kenya
viii.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of Nigeria
ix.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of South Africa
x.   Examine the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of Uganda.

1.2   RESEARCH QUESTIONS
The following research questions were answered to obtain the findings or results of the study.
i.   To what extent does (company's income tax, personal income tax, custom and excise duties and value added tax) affect Gross Domestic Growth of Botswana?
ii.   To what extent does (company's income tax, personal income tax, custom and excise duties and value added tax) influence Gross Domestic Growth of Cameroun?
iii.   What degree of influence does tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) have on Gross Domestic Growth of Tunisia?

iv. What degree of influence does tax revenue (company's income tax, personal income tax, custom and   excise duties and value added tax) have on Gross Domestic Growth of DR Congo?

v. To what extent does tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) affect Gross Domestic Growth of Egypt?

vi. To what extent does tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) affect Gross Domestic Growth of Ghana?

vii. What degree of influence does (company's income tax, personal income tax, custom and excise duties and value added tax) have on Gross Domestic Growth of Kenya?

viii. What degree of influence does (company's income tax, personal income tax, custom and excise duties and value added tax) have on Gross Domestic Growth of Nigeria?

ix. To what extent does tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) affect Gross Domestic Growth of South Africa?

x. To what extent does tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) affect Gross Domestic Growth of Uganda?

1.3   HYPOTHESES

The following null hypotheses, which will be tested at 5% level of significance, have been formulated to guide this study.

i. Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have significant effect Gross Domestic Growth of Botswana.

ii.   Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have significant effect on Gross Domestic Growth of Cameroun.

iii. Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have significant effect on Gross Domestic Growth of Tunisia.

iv. Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have any significant effect on Gross Domestic Growth of DR Congo.

v. Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have significant effect on Gross Domestic Growth of Egypt

vi. Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have significant effect on Gross Domestic Growth of Ghana.

vii. Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have significant effect on Gross Domestic Growth of Kenya

viii. Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have significant effect on Gross Domestic Growth of Nigeria

ix. Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have significant effect on Gross Domestic Growth of South Africa

x. Tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) does not have significant effect on Gross Domestic Growth of Uganda

II.   REVIEW OF RELATED LITERATURE

2.1   CONCEPTUAL FRAMEWORK

 Extant relevant literatures on the effect of tax revenue on African economic growth were surveyed. In specific terms, it captures the conceptual framework where positive and negative effects of tax revenue were reviewed. Besides, the study discusses the theoretical framework and settles for the Neoclassical Growth Models of Public Policy theory which aptly fits into the study. A number of empirical evidence on the subject matter and gaps in available literature were evaluated to bring the chapter to a conclusion.

2.1.1   **Conceptual model**

Tax Revenue   Economic Growth

Independent Variables   Dependent Variables

                                                           (Gross Domestic Product)
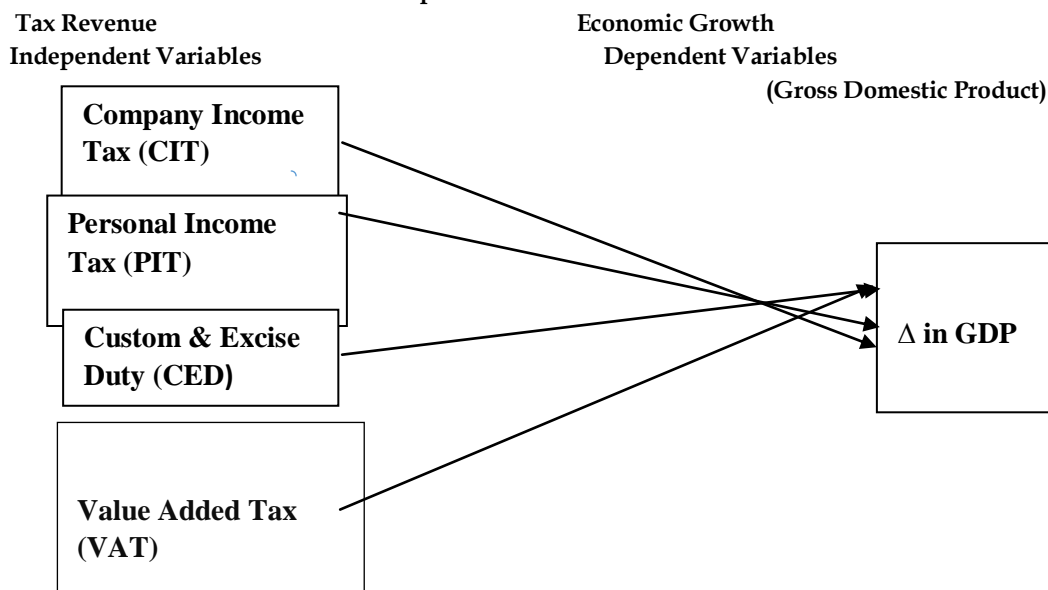

Figure 2.1:   Source: Researcher's Operationalized Model (2021)

2.1.3   Concept of taxation

The World Bank (2000) defines taxes as a compulsory transfer of resources to the government from the rest of the economy. It was stipulated further that no particular tax structure has the capacity to meet the requirement of every country. This implies that each tax structure has its inherent loopholes and for this reason the need for continuous review of the tax structures and amendment of tax laws. Igbasan (2017) then made it clear that the best system for any country should be to make a favourable decision as regards the best and efficient tax system or structure bearing in mind its economic structure, capability to administer taxes and public needs among other factors. Miller and Oats (2006) noted that taxation is a prerequisite to funding public expenditure. That is to say that for a country to have a worldview or initiative on how tax matters should look like, there should be a crucial look at tax policies that subsist globally. Taxation is equally described as an apparatus in use by the government for raising public funds. In other words, tax is an obligatory legal levy imposition by the government which is made on income, profit or wealth of individuals, group of individuals or persons and corporate bodies. Piana (2003) is of the view that it is as a result of the use of tax rate to a tax base. The implication is that tax rate could be adopted by the government for either upward or downward review of the tax base of the government and this depends on the prevailing circumstances in the economy and policy direction of the government.

Ezejelue and Ihendinihu (2006) describe taxation as a request for payment of money by government authorities of for a compulsory payment of money by the populations of the nation with the intention of realising money to fund various government developmental goals, gratify combined wants of the citizens and ensure proper regulation of economic and social policies.

Azubike (2009) stated that tax is a key source of government revenue globally. To enable government deliver its traditional functions which include the provision of public goods, maintenance of law and order, defending the nation against external aggression, regulation of trades, ensuring social and economic maintenance, government needs tax proceeds. Nwezeaku (2005) puts up argument that the scope of these functions is a function of the political and economic orientation of the people, their needs and aspirations including their willingness to remit tax liability to the government. Accordingly, a government ability to perform its operations to a reasonable degree depends on efficiency of a well-designed tax plans and administration, willingness and patriotism of the governed.

2.1.4 Development of diverse tax types and revenues in Africa

Gbato (2017) noted that tax revenue structures have undergone changes in recent years in sub-Saharan Africa and all over Africa in general. There has been an average increase from 12% in 2000 to more than 15% of Gross Domestic Product (GDP) in 2010. This is a suggestion of increase in revenue from consumption taxes (indirect taxes) and improvement in direct taxes. Indirect taxes generate more tax revenue than other tax types or composites in Africa. Since the introduction of value added tax (VAT) in 1990s, the success it has recorded in countries of Africa is a pointer that indirect taxes generate more reliable and predictable tax revenue conveniently. The revenue mobilization of VAT has been significant as a result of the simplicity of its implementation together with the minimal economic cost.

In 32 countries studied in Africa by Gbato (2017), the contribution of indirect revenues in the countries studied increased from 27% in 1990 to 43% of total tax revenue in 2010. In African countries, direct taxes have not grown higher than indirect taxes. For example, a decline from 27% in 1990 to 25% between 1991 and 1998 of direct taxes was recorded. Dwindling tax revenue is the result of incentives being granted to investors in order to encourage investment and attract foreign direct investment within the continent. Indisputably in many countries of the region the quest to attract foreign investment has led to the formulation of several policies that have encouraged several tax exemptions. Instances of such tax exemptions comprise tax holidays and other instruments to trim down the effective rate of corporate taxes.

2.1.5   Economic growth and economic development: Economic growth specifically means an increase in the value of goods and services produced by a country over a period. Economists use an increase in nation's GDP to measure it. Therefore, it is possible to have economic growth without economic development in the short or even medium term. On the other hand, there could be an increase in GDP without any increase in standard of living of people in a state. On the other hand, given that the two are different, any effort to use GDP as a measure for the two gives inaccurate outcome on economic development.

Furthermore, according to the United Nations report on Human Development Index (HDI) 'development goes beyond the expansion of income and wealth. It connotes a process of enlarging people's choices' (UNDP, 1990). It is a shift to a more holistic insight of development thathad earlier focused more on per capita income. United Nation's Human Development released Human Development Index (HDI) first as part of her 1990 Report. The United Nations came up with Human Development Index (HDI) as a parameter for ranking countries' levels of social and economic development based on the following namely Health Index, Education Index, and Standard of Living Index. The health index is a representation of life expectancy (expected numbers of years) of a particular region or country under study.

On the other hand, there could be an increase in GDP without any increase in standard of living of people in a state. Environmental conditions that would enhance economic growth must be created through an investment of the national wealth in infrastructural development for successive improvement in the standard of life of the population of a country (Wilkins & Zarawski, 2014) in (Ofoegbu, Akwu & Oliver, 2016). The living standard index indicates the per capita income of a region or country stated in US$ at Purchasing Power Parity (PPP) rate. Despite the seemingly growth rate of HDI on only papers, in reality, average Africans are yet to feel its effects as they cannot boost of good quality of living.

Positive Attributes of Taxes on Economic Growth

Gale and Samwick (2016) focused on income taxes and their study reveals that reforms that require base-broadening measures have a positive effect on growth as a result of the reallocation of resources from sectors that are currently tax-preferred to sectors that have the highest return, which should improve the size of the economy on the whole. They went further defining economic growth as 'the expansion of the supply side of the economy and of possible increase in GDP.

Yi and Suyono (2014) in their examination of the Hebei Province in China, uncovered that at provincial level, tax increases may not have as negative an effect on growth as most other studies have shown by adjusting the tax multiplier formula in their method. The study reveals that the reformation of indirect tax to direct tax produce more conducive effects on growth as well as controlling government spending to factors that promote their better living standard such as social security and other social programmes, and compensation for costs in the medical system.

Helms' (1985) study on the effects of tax revenue on economic growth showed that at the state and local levels, increases in taxes encourage economic growth because tax revenues are used to fund improved public services instead of transfer payments. The study finds a negative relationship between tax increases and economic growth.

Negative Attributes of Taxes on Economic Growth

McBride (2012) reviews twenty-six studies carried out from 1983 up until 2012, investigating how taxes affect growth. Twenty of these studies, in addition to those conducted in the last fifteen years, reveals a long term negative effect of taxes on growth. They move from the premise that growth is preceded by income and wealth production; however, taxes discourage investment, therefore restricting growth. Kimel (2011) studied the relationship of taxes to growth by assessing how taxpayers in the top marginal bracket make their investment and consumption choices. He found that as soon as the tax rates exceed 50%, taxpayers have the tendency to do more consumption than investment. This means that the correlation between the maximum marginal tax rate and the ratio of investment to consumption for top marginal tax rates below 50% is 55%. Thus the increase in investment choice positively impacts on economic growth. Similarly, Levine (1991) finds that when tax policy reduces investment incentives, it negatively affects growth. Gale, Krupkin and Rueben (2015) find that neither tax revenues nor top income tax rates have a major relationship with economic growth.

Factors Driving Economic Growth

Barro (1996) employs neoclassical and endogenous growth theory to establish the factors that encourage economic growth, which are stated as higher initial schooling and life expectancy, lesser fertility, better safeguarding of the rule of law, reduced government consumption expenditure, reduction in inflation and terms of trade improvement. Also listed is what is referred to as public policies comprising tax distortions, public-pension transfer programmes and regulations that influence labour, financial, and other market.

Chen and Feng (2002) in their study on factors determining economic growth in China noted four factors that government should employ in increasing economic growth across all provinces in the country to include reducing inequality to retain political stability, redirecting government spending to setting up schools, getting better health care, and construction of inter-provincial infrastructure if financial support is provided, open flow of goods and a unwavering macroeconomic atmosphere favourable for sustainable economic growth.

2.2 THEORETICAL FRAMEWORK

2.2.1 Benefit Received Theory: This theory proceeds on the assumption that there is basically an exchange relationship between tax-payers and the state. The state provides certain goods and services to the members of the society and in turn they contribute to the cost of these supplies in proportion to the benefits received (Bhartia, 2009) in (Ogbanna and Ebimobowei,2012). Anyanfo (1996) in (Ogbonna and Ebinmobowei,2012) argues that taxes should be allocated on the basis of benefits received from government expenditure.

2.3 EMPIRICAL REVIEW

Many diverse empirical studies have examined the effect of tax revenue on economic growth with the outcome being conflicting and divergent. There is yet to be a conclusion because of varying results stemming from fiscal variables involve, countries and methodologies. This research work critically examines the empirical works from different African countries

Table 1   **Summary of Literature**

S/N	Researcher (s)	Year	Topic	Findings	Gap
1	Ihendinihu, Jones and Ibanichuka	2014	Long-run equilibrium relationships between tax revenue and economic growth in Nigeria 1986 and 2012.	Total tax revenue has a significant effect on economic growth. RGDP.CIT, EDT and OTR were discovered to have significant effects on economic growth; maintaining long-run equilibrium nexus with RGDP.	PIT as an independent variable was not integrated into tax revenue. Change in GDP was not used as the dependent variable.
2	Eke, Ekwe and Ihendinihu	2018	Impact of Tax Revenues on economic growth in Nigeria	The result of the study indicated that all the individual tax revenues components (PIT, PPT, CIT, VAT, and CED) were significant and positively signed meaning that an increase in these variables will result to equivalent increase in economic growth of Nigeria.	The study did not extend to 2018 and should have considered as well the impact of total tax revenue on economic growth as well.

3	Joseph, Azubike, Tapang, Dibia	2018	Impact of indirect taxes on economic growth in Nigeria.	The result revealed that VAT had a negative and significant impact on RGDP at 1% level of significance. In addition, past CED had a negative and weakly significant impact on real gross domestic product at even more than 10% level of significance.	A direct tax such as PIT was omitted. The impact of PPT was not equally.
4	Nwawuru, Nmesirionye and Ironkwe	2018	Analysis of the Impact of VAT on Federally collected Revenue in Nigeria (1994 – 2012)	VAT has significant effect on total revenue which is about 34.5% of the total disparity in the response variables. Also, significant long run equilibrium relationships were shown to exist between the totally federally collected revenue and value added tax.	The study should have extended its data sourcing to 2017 in order to have comprehensive and more current results
5	Nmesirionye, Nwawuru and Ekwuruke Henry	2018	Analysis of the Impact of Federally Collectable Taxes on Economic Growth of Nigeria (2000-2015).	The empirical results of the estimated model indicated that there was a positive but insignificant impact of various tax components on economic growth of Nigerian in the long run	PIT was not captured as one of the predictor variables. The study did not extend to 2017 to have current and comprehensive results.
6	Babatunde, Ibukun and Oyeyemi	2017	Tax revenue and economic growth in Africa.	Tax revenue is positively correlated to GDP and encourages the growth of economies of countries in Africa.	The study used GDP absolute which is not a good measure for economic growth as does not capture growth annually.
7	Ogbonna and Ebimobowei	2012	The impact of tax reforms on the economic growth of Nigeria.	Tax reforms have positive significant effect on economic growth.	This research studied the period 1994 to 2009. Also the study adopted the Benefit received theory which posits that tax payers evade tax because they don't receive benefits from the government.
8	Kaibel and Nwokah	2009	Improving revenue generation by state government in Nigeria: The tax consultant's option	A negative relationship exists between PIT and economic growth CIT does not correlate with it growth at all.	They did not include the VAT, PPT and in their study thus limiting the scope of the study

| 9 | Babatunde et al. | 2017 | Effect of tax revenue on economic growth. | Tax revenue is positively related GDP and enhances economic growth in Africa. | GDP Absolute was adopted as an independent variable, but this does not measure growth. |
| 10 | Ugwunta.& Ugwuanyi N'Yilimon | 2014 2015 | The Relationship between tax revenue and economic | Taxes on income, profits, capital gains, and tax on payroll, and labour, property taxes, estates, fixed assets and financial transactions have negative and insignificant effect. On the contrary, indirect taxes have a positive and insignificant effect on economic growth of sub-African countries. | GDP Absolute figure was not used as the independent variable which is not a reliable yardstick to measure economic growth. |

III.   Methodology

 Ex-post facto research design was used in carrying out the study. Data were obtained from the World Development Indicators, the World Bank, IMF World Economic Outlook database, OECD. Stat Online Database and UNCTAD online, African Statistical Year Book, CBN and FIRS for a period of 38 years covering 1981 to 2018. This research design is adopted because there were existing validated and reliable time series data from official sources from the ten (10) selected. Africa as a continent comprises 54 countries. The population of this study comprise of the 54 African countries. The sample size is ten (10) African countries selected from each of the five (5) regions of the continent. Two countries are selected from each of the regions namely North Africa, East Africa, Southern Africa, Central Africa and West Africa. The main criteria for selection of the countries are; the countries selected from each region must be among the top (highest) two in terms of GDP of the regions based on ranking by World Population Review (2019).

Using the above conditions as criteria for selection, the following countries are selected: Nigeria, Ghana, South Africa, Kenya, Tunisia, Egypt, Uganda, Cameroon, Democratic Republic of Congo and Botswana. These countries were chosen from various sub-regions of Africa and in relation to their ranking in terms of GDP. Effort was made to ensure that countries with highest GDP in order of raking by World Population Review (2019) were chosen. The study employed a judgmental technique in selecting the sample for the study. The sample selected is deemed to satisfy the predetermined criteria for selection. According to Piroska, B. B. (2021), a good minimum sample size is usually 10% as long as it (population) does not exceed 1000. These data obtained were adjudged appropriate for this study because of the following reasons:

 i. They had been already authenticated by professionals and other regulatory bodies before they were published by the relevant bodies.

ii. Consistently, the data have been used in previous related studies and have produced good results. For example, Igbasan (2017) and Riba (2016); Onakoya, Babatunde, Ibukun and Oyeyemi, (2017); Okafor (2012); Success**,** Success and Ifurueze (2012); Saheed, Abarshi and Ejide (2014) used data from these sources for their various studies.

The data used in this study were collected based on the variables identified in the research objectives. The data for Gross Domestic Product (GDP) and tax components namely Company Income Tax (CIT), Personal Income Tax (PIT), Custom and Excise Duties (CED) and Value Added Tax (VAT) for all the countries from the sample size were accordingly obtained. The independent variables proxy as tax components namely Company Income Tax (CIT),

Personal Income Tax (PIT), Custom and Excise Duties (CED) and Value Added Tax (VAT) are regressed against the dependent variable proxy as Gross Domestic Product (GDP)

3.1   MODEL SPECIFICATION

This study examined the comparative effect of tax revenue on economic growth of African countries. In order to accomplish this, two variables were identified in the study and these are dependent and independent variables. The independent variables are the tax components generated in the countries chosen and they include Companies Income Tax (CIT), Personal Income Tax (PIT), Custom and Excise Duties (CED) and Value Added Tax (VAT). On the other hand, the dependent or response variable for Economic Growth (EG) is proxied by Δ in Gross Domestic Product (GDP) of selected African countries for the period under study. The study adapted the model used by Igbasan (2017).

Functional Relationships

`

GDP = f (CIT) 1

GDP = f (PPT) ....…2

GDP = f (CED) 3

GDP = f (VAT) 4

GDP = f (CIT, PPT, CED, VAT) 4

Where:

Y= Economic Growth (EG)

y1 = Gross Domestic Product (GDP)

X = Tax Revenue (TAR)

x1= Companies Income Tax (CIT)

x2 = Petroleum Profit Tax (PPT)

x3= Custom and Excise Duties (CED)

x4= Value Added Tax (VAT)

But this study has made the following some modifications or changes on the adapted model as depicted below:

Functional Relationships

Y= f(X)

Y = y1

X = x1, x2, x3, x4

Where;

Δ = Change

Y= Economic Growth (EG)

y1= Δ in Gross Domestic Product (ΔGDP)

x_1= Companies Income Tax (CIT)

x_2 = Personal Income Tax (PIT)

x_3= Custom, Excise Duties (CED)

x_4 = Value Added Tax (VAT)

$\mu_t$are the stochastic variable of each model; it is the error term which denotes other variables that are not captured in the model.Its introduction in the model is to accommodate the influences of the other factors that may affects economic growth which are not implicitly included in the models.

Functional Relationship

ΔGDP= ƒ (CIT, PIT, CED, VAT) ……..1

In Econometric form;

$\text{Log}\Delta\text{GDP}_t = \alpha 1 + \beta 1 \text{LogCIT}_t + \beta 2 \text{LogPIT}_t + \beta 3 \text{LogCED}_t + \beta 4 \text{LogVAT}_t + \mu_t$ …*Specific country Model 2*

3.2   DATA ANALYSIS TECHNIQUES

The study adopted descriptive statistics, Unit root test, Co-integration test, and Panel regression test for the analysis of data.

The descriptive statistics was used to analyze the various means, standard deviation, maximum and minimum values of the variables used for the study. Also the descriptive statistics probability value is used to for initial distributive normality of data at the descriptive statistics level.

Unit root test was conducted using both the Levin Lee Chu test for individual stationarity and the Augmented Dickey-Fuller for common stationarity of data.

To further test for long run bounce back of the data set, the study employed the Johansen co-integration test to ascertain whether there is a long run relationship between the data set. This was done to ensure that the study adopts either the panel (OLS) regression or the Vector Autoregressive (VAR) model for further analysis.

The VAR error correction model was used throughout the study to test for individual hypothesis of African countries effect of company income tax, personal income tax, custom and excise duty, and value added tax on gross domestic product, foreign direct investment and per capita income. Also the multiple ordinary least square regressions was employed by the study to test for country level hypotheses.

3.3 Descriptive statistics

The descriptive statistics for both the dependent and independent variables are presented in table 4.1:

Table 2: Descriptive Statistic Table

	CIT	PIT	CED	VAT	GDP
Mean	3.538897	3.864795	3.570564	3.154231	12.32403
Median	3.770000	3.970000	3.670000	3.520000	1.075000
Maximum	5.880000	10.15000	6.400000	6.780000	814.8700
Minimum	-5.150000	-2.220000	-0.610000	-0.380000	-397.4700
Std. Dev.	1.521503	1.814878	1.481890	2.033391	70.21084
Skewness	-1.330232	-0.142837	-0.543500	-0.287510	5.006847
Kurtosis	7.026820	4.186475	2.924925	1.870345	55.21352
Jarque-Bera	378.5169	24.20167	19.29205	26.10997	45931.04
Probability	0.000000	0.000006	0.000065	0.000002	0.000000
Sum	1380.170	1507.270	1392.520	1230.150	4806.370
Sum Sq. Dev.	900.5238	1281.282	854.2429	1608.390	1917600.
Observations	390	390	390	390	390

Source: Author's Computation, using E-View 9, 2021

The table presents the descriptive statistics of all the variables. The number of observation for the study is 390. From the table, the following information is distilled.

The result reveals that, Company Income Tax (CIT) reflects a mean of 3.538897 with a deviation of 1.521503. CIT also reveal a maximum value of 5.880000 and a minimum value of -5.150000. Personal Income Tax (PIT) reveals a mean of 3.864795 with a deviation of 1.814878. PIT further reveals maximum and minimum values of 10.15000 and -2.220000 respectively. The Custom and Excise Duty (CED) has a mean of 3.570564 with a deviation of 1.481890. Furthermore, CED records a maximum and minimum value of 6.40000 and -0.610000. More so, Value Added Tax (VAT) result reveals maximum and minimum values of 6.780000 and -0.380000. VAT also reveals mean and standard deviation of 3.154231 and 0.2.033391. For Gross Domestic Product (GDP), the result reveals maximum and minimum values of 814.8700 and -397.4700. GDP also reveals mean and standard deviation of 12.32403 and 70.21084 respectively.

To test for normality of data, the Skewness, Kurtosis and Jarque-Bera statistics are used. For CIT, the data set reveals a skewness value of -1.330231 which means that majority of the data values are below the mean, with a leptokurtic value of 7.026820. The Jarque-Bera measure of skewness and Kurtosis difference reveals a value of 378.5169 with a probability value of 0.0000. This means that the data for CIT of the African countries is not normally distributed. Again for PIT, the data set reveal a skewness value of -0.142837 which means that majority of the data values are below the mean, with a leptokurtic value of 4.186475. The Jarque-Bera measure of skewness and Kurtosis difference reveals a value of 24.20167 with a probability value of 0.000006. This means that the data for PIT of the African countries is not

normally distributed. For CED, the data set reveal a skewness value of -0.5435000 which means that majority of the data values are below the mean, with a platykurtic value of 2.924925. The Jarque-Bera measure of skewness and Kurtosis difference reveals a value of 19.29205 with a probability value of 0.000065. This means that the data for CED of the African countries is not normally distributed. VAT reveal a skewness value of -0.287510 which means that majority of the data values are below the mean, with a platykurtic value of 1.870345. The Jarque-Bera measure of skewness and Kurtosis difference reveals a value of 26.10997 with a probability value of 0.000002. This means that the data for VAT of the African countries is not normally distributed. For GDP, the data set reveals a skewness value of 5.006847 which means that majority of the data values are above the mean, with a leptokurtic value of 55.21352.

The Jarque-Bera measure of skewness and Kurtosis difference reveal a value of 45931.04 with a probability value of 0.000000. This means that the data for GDP of the African countries is not normally distributed.

3.4 Data validity test

In order to ensure that the results are robust, several diagnostic tests are conducted to enhance the viability of data and model specified for analyses. As such, data diagnostic test such as; the Unit root test and the Co-integration test are computed.

3.5 Stationarity/unit root tests

To avoid running a spurious regression, unit root test was carried out to ensure that the variables employed in this study are mean reverting i.e. stationary. For this purpose, the Levin, Lin & Chu test andAugmented Dickey Fuller (ADF) test were employed to test for stationary of data. The result of the test is presented in the table below.

Table 3: Unit Root Test Table

Variable	LLC (Common P-value)	ADF (Individual P-Value)	Difference
CIT	0.0000	0.0000	1st
PIT	0.0000	0.0000	1st
CED	0.0000	0.0000	1st
VAT	0.0000	0.0000	1st
GDP	0.0006	0.0000	1st

Null: There is serial Unit Root in the data

Source: Extract from Tables 21-21 in Appendix II, 2021

The table shows the result of the first test required to know the common and individual stationarity of the variables. For the common stationarity test, the Levin Lin Chu (LLC) test for common stationarity was used which considers lags in data series. All the variables show a LLC P-value less than 0.05 which depicts stationarity at 1st difference except data for FDI and PCI (1.000 & 1.000) which were not logged as a result of the negative values included in the data which will definitely give rise to 0 (Zero) values; this means the data contained a level of noise that needs further checks at individual level to ascertain the country level data noise and to see if it will affect further analysis. The Augmented Dickey-Fuller (ADF) unit root test result for individual stationarity is interpreted using the p-value to ascertain the level of individual stationarities of the panel variable data. The data were stationary at 1st diference (ADF) with a P-values less than of 0.05 for all the variables. Since the variables data set are all individually stationary at 1st difference, there is need for co-integration test to be carried out to ascertain both the long run and short run interaction of the series in order to choose the most appropriate method for further regression analysis.

3.6 Co-integration test

H_0: There is no co-integration

Table 4: Table for Co-integration Test

Statistic			Model 1
Panel v-Statistic	Within Dimension		0.9581
Panel rho-Statistic	Within Dimension		0.7461
Panel PP-Statistic	Within Dimension		0.0002**
Panel ADF-Statistic	Within Dimension		0.0000**
Panel v-Statistic (W)	Within Dimension		0.8937
Panel rho-Statistic (W)	Within Dimension		0.8297
Panel PP-Statistic (W)	Within Dimension		0.0747
Panel ADF-Statistic (W)	Within Dimension		0.0001**
Group rho-Statistic	Between Dimension		0.9311
Group PP-Statistic	Between Dimension		0.0433**
Group ADF-Statistic	Between Dimension		0.0017**
Total			5

Source: Extract from Tables 22-27 in Appendix II, 2021

The table reveals the result of Pedroni co-integration test for the panel data set. To ensure the level of co-integration of the data set, 11 (Eleven) statistics listed in the table above is considered to ensure a more robust test for co-integration using multiple criteria ranging from individual level to group level data. Each panel and group statistic probability value is tested against the Pedroni stated Null hypothesis above and the general rule of thumb (>0.05) for null hypothesis acceptance. The highest tested outcome (Decision) will form the basis for conclusion.

In the model, there are eleven test statistics. Out of the 11 co-integration test statistics, 5 (**) statistics have a probability value of <0.05, against 6 other statistics (non asterisks) with probability values > 0.05. Therefore majority of the co-integration test statistics in model 1 above reveals that, there is no co-integration of data for the series. This means that, in cases of short run shocks, the data series cannot converge in the long run to absorb the short run shocks.

3.7   Regression of the Estimated Model Summary

This section of the chapter presents the results produced by the Error Correction Model summaries for further analysis.

3.8   Model 1: Testing for the effect of company income tax, personal income tax, custom and excise duty, value added tax on gross domestic product of African countries.

Table 5: Error Correction Model Table 1

Long run equilibrium	Coefficient	Short run equilibrium	Coefficient
GDP (-1)	1.0000	GDP (-1)	-0.615599
CIT (-1)	-653.8479	CIT (-1)	-2.263116
PIT (-1)	-27.73543	PIT (-1)	1.988612
CED (-1)	335.2250	CED (-1)	-1.896099
VAT (-1)	225.5989	VAT (-1)	7.509166
Cont Eq	0.002508		
	Lag 1		**Lag 2**
VEC LM Test	0.5826	VEC LM Test	0.5499

Source: Extract from Tables 28-29 in Appendix II, 2021

The table presents result of the Vector Error Correction Model (VECM) for model 1 to test for long run and short run shocks correction as a result of non-co-integration of the data set in model 1 above. The various coefficient values of the short run equilibrium is compared against the long run equilibrium to ascertain the level of bounce backs in addressing non-long run co-integration issues of the model.

After 1st differences, the adjustment coefficient (Cont Eq) value of 0.002508 shows that, the previous period deviation from long run equilibrium is corrected in the short run at an adjustment increased speed of 0.002508. For CIT coefficient, a unit change in CIT is associated with a 2.263116 unit decrease in GDP in the short run *Ceteris Paribus* against the long run coefficient of -653.8479. For PIT coefficient, a unit change in PIT is associated with a 1.9888612 unit increase in GDP in the short run *Ceteris Paribus* against the long run coefficient of -27.73543. For CED coefficient, a unit change in CED is associated with a 1.896099 unit decrease in GDP in the short run *Ceteris Paribus* against the long run coefficient of 335.2250. Lastly, for VAT coefficient, a percentage change in VAT is associated with a 7.509166 unit change in GDP in the short run *Ceteris Paribus* against the long run coefficient of 225.5989.

The VEC LM test for autocorrelation reveals values of 0.5826 (Lag 1) and 0.5499 (Lag 2). This shows that the set of data after error correction has no presence of autocorrelation, as such, further regression analysis is permitted.

Table 6: Country by Country Analysis of the Effect Tax Revenue on Economic Growth (Country level Fluctuation Result)

	Botswana	Cameroun	Tunisia	DR/Congo	Egypt	Ghana	Kenya	Nigeria	S/Africa	Uganda
C	0.571250	22.24358	15.48821	1.735611	72.79551	-167.9940	71.31657	324.2183	-947.7127	4.983040
CIT	0.113701	-15.16015	1.637928	0.147667	59.79262	154.7944	-8.871666	3.510936	90.24809	9.582470
PIT	-0.025388	20.67567	0.093196	1.949077	-48.87501	-71.37009	17.14083	-23.46489	208.8139	-9.459418
CED	-0.203308	-11.42588	-5.679443	-1.129051	49.57878	3.201290	-27.79098	-57.49977	127.7197	-1.043268
VAT	-0.009279	1.862702	-0.980330	-1.341112	-74.93872	-11.80668	3.097360	4.763582	-180.0285	1.060655
R²	0.071121	0.139709	0.111784	0.026878	0.107405	0.113694	0.068980	0.117694	0.863584	0.203586
R² A	-0.090424	-0.089701	0.007288	-0.135309	0.002393	0.009423	-0.059437	-0.058767	0.847049	0.016195
P (F)	0.778214	0.662416	0.386600	0.953706	0.409527	0.376882	0.709549	0.622357	0.00000	0.394384

Source: Extract from Tables 37-66 in Appendix II 2021

From the table, data from Botswana reveal a constant value of 0.571250 with coefficient values of 0.113701, -0.025388, -0.203308 and -0.009279, for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for Botswana, the GDP will fluctuate by 0.571250 units. A unit change in CIT, PIT, CED and VAT cause GDP to change by 0.113701, -0.025388, -0.203308 and -0.009279 values respectively. Collectively, CIT, PIT, CED and VAT cause a 7.1% (0.071121) variation in GDP of Botswana while the remaining 92.9% change is caused by other factors like change in government policies and economic issues. If these factors are considered, there would be a 0.161 (0.071- -0.090); 16.1% deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.778214 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Botswana.

Cameroun data reveal a constant value of 22.24358 with coefficient values of -15.16015, 20.67567, -11.42588 and 1.862702, for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for Cameroun, the GDP fluctuates by 22.24358 units. While, unit change in CIT, PIT, CED and VAT cause GDP to change by -15.16015, 20.67567, -11.42588 and 1.862702 values respectively. Collectively, CIT, PIT, CED and VAT cause an approximate 14% (0.139709) variation in GDP of Cameroun while the remaining 86% change is caused by other factors like change in government policies and economic issues. If these factors are considered, there would be a 0.228 (0.0139- -0.089); 22.8% deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.662416 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Cameroun.

Tunisian data reveal a constant value of 15.48821 with coefficient values of 1.637928, 0.093196, -5.679443 and -0.980330 for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for Tunisia, the GDP would fluctuate by 15.48821 units. While, a unit change in CIT, PIT, CED and VAT would cause GDP to change by 1.637928, 0.093196, -5.679443 and -0.980330 values respectively. Collectively, CIT, PIT, CED and VAT cause a 11.1% (0.111784) variation in GDP of Tunisia while the remaining 88.9% change is caused by other factors like change in government policies and economic issues. If these factors are considered, there would be a 0.104 (0.111- 0.007); 10.4%

deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.386600 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Tunisia.

Data for DR Congo reveal a constant value of 1.735611 with coefficient values of 0.147667, 1.949077, -1.129051, and -1.341112, for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for DR Congo, the GDP would fluctuate by 1.735611 units. While, a unit change in CIT, PIT, CED and VAT cause GDP to change by 0.147667, 1.949077, -1.129051, and -1.341112 values respectively. Collectively, CIT, PIT, CED and VAT cause approximate 2.7% (0.026878) variation in GDP of DR Congo while the remaining 97.3% change is caused by other factors like change in government policies and economic issues. If these factors are considered, there would be a 0.161 (0.026- -0.135); 16.1% deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.953706 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of DR Congo.

Egyptian data reveal a constant value of 72.79551 with coefficient values of 59.79262, -48.87501, 49.57878 and -74.93872 for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for Egypt, the GDP would fluctuate by 72.79551 units. While, a unit change in CIT, PIT, CED and VAT cause GDP to change by 59.79262, -48.87501, 49.57878 and -74.93872 values respectively. Collectively, CIT, PIT, CED and VAT cause a 10.7% (0.107405) variation in GDP of Egypt while the remaining 89.3% change is caused by other factors like change in government policies and economic issues. If these factors are considered, there will be a 0.105 (0.107- 0.002); 10.5% deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.409527 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Egypt.

Ghana data reveal a constant value of -167.9940 with coefficient values of 154.7944, -71.37009, 3.201290 and -11.80668 for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for Ghana, the GDP will fluctuate by -167.9940 units. While, a unit change in CIT, PIT, CED and VAT cause GDP to change by 154.7944, -71.37009, 3.201290 & -11.80668 values respectively. Collectively, CIT, PIT, CED and VAT cause a 11.4% (0.113694) variation in GDP of Ghana while the remaining 89.6% change is caused by other factors like change in government policies and economic issues. If these factors are considered, there will be a 0.104 (0.113- 0.009); 10.4% deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.376882 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Ghana. Kenyan data reveal a constant value of 71.31657 with coefficient values of -8.871666, 17.14083, -27.79098 and 3.097360 for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for Kenya, the GDP will fluctuate by 71.31657 units. While, a unit change in CIT, PIT, CED and VAT cause GDP to change by -8.871666, 17.14083, -27.79098 and 3.097360 values respectively. Collectively, CIT, PIT, CED and VAT cause a 6.9% (0.068980) variation in GDP of Kenya while the remaining 93.1% change is caused by other factors like change in government policies and economic issues. If these factors are considered, there would be a 0.127 (0.068- -0.059); 12.7% deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.709549 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Kenya.

Data for Nigeria reveal a constant value of 324.2183 with coefficient values of 3.510936, -23.46489, -57.49977 and 4.763582 for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for Nigeria, the GDP would fluctuate by 324.2183 units. While, a unit change in CIT, PIT, CED and VAT will cause GDP to change by 3.510936, -23.46489, -57.49977 and 4.763582 values respectively. Collectively, CIT, PIT, CED and VAT cause a 11.8% (0.117694) variation in GDP of Nigeria while the remaining 88.2% change is caused by other factors like change in government policies and economic issues. If these factors are considered, there would be a 0.175 (0.117- -0.058); 17.5% deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.622357 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Nigeria.

South African data reveal a constant value of -947.7127 with coefficient values of 90.24809, 208.8139, 127.7197 and -180.0285 for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for South Africa, the GDP fluctuates by -947.7127 units. While, a unit change in CIT, PIT, CED and VAT cause GDP to change by 90.24809, 208.8139, 127.7197 and -180.0285 values respectively. Collectively, CIT, PIT, CED and VAT cause a 86.4% (0.863584) variation in GDP of South Africa while the remaining 13.6% change is caused by other factors like change in government policies and economic issues. If these factors are considered, there would be a 0.016 (0.863- 0.847); 1.6% deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.00000 shows that the CIT, PIT, CED and VAT as a whole significantly affect the GDP of South Africa.

Ugandan 060655 for CIT, PIT, CED and VAT respectively. This means, when CIT, PIT, CED and VAT are held constant for Uganda, the GDP would fluctuate by 4.983040 units. While, a unit change in CIT, PIT, CED and VAT cause GDP to change by 9.582470, -9.459418, -1.043268 and 1.060655 values respectively. Collectively, CIT, PIT, CED and VAT cause a 20% (0.203586) variation in GDP of Uganda while the remaining 80% change is caused by other factors data reveal a constant value of 4.983040 with coefficient values of 9.582470, -9.459418, -1.043268 and 1. like change in government policies and economic issues. If these factors are considered, there would be a 0.187 (0.203- 0.016); 18.7% deviation from the change already established. Also, the Fisher statistics probability (P[F]) value of 0.394384 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Uganda.

IV. DISCUSSIONAND SUMMARY OF FINDINGS

4.1 Result discussion for model one: effect of company income tax, personal income tax, custom and excise duty, value added tax on gross domestic product of African countries.

For the model specified, ten specific objectives were set to ascertain the effect of custom & excise duties, company income tax, personal income tax and value added tax on gross domestic product of selected African countries. Country level data and both panel data of the African countries is analysed, hypothesis tested and the following results are revealed; In west Africa, Nigerian data showed that CIT, PIT, CED and VAT cause GDP to fluctuate at 11.8%, whereas in Ghana, the data showed that CIT, PIT, CED and VAT cause GDP to fluctuate at 11.4%. For Central Africa, the result revealed that CIT, PIT, CED and VAT cause GDP of Cameroun to fluctuate at 13.9%, compared to 2.7% for DR Congo. For countries in Southern Africa, the data showed that CIT, PIT, CED and VAT cause GDP of South Africa to fluctuate at 86.3% while, CIT, PIT, CED and VAT cause GDP of Botswana to fluctuate at 7%. For East African countries, the findings revealed that CIT, PIT, CED and VAT cause GDP of both Kenya and Uganda to fluctuate at 6.8% and 20.3 respectively. In North Africa, Egyptian data analysed revealed that CIT, PIT, CED and VAT cause GDP to fluctuate at 10.7% while for Tunisia, the result revealed that CIT, PIT, CED and VAT cause GDP to fluctuate at 11.1%. From the result, it is clear that among African countries, South African tax system is highly effective in harnessing tax revenue for the country's GDP growth; this is seen in the value of R^2 shown by South Africa data which is above 50% as against other African countries.

V. Conclusion

The Fisher statistics probability (P[F]) value of 0.778214 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Botswana. The Fisher statistics probability (P[F]) value of 0.662416 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Cameroun. The Fisher statistics probability (P[F]) value of 0.386600 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Tunisia. The Fisher statistics probability (P[F]) value of 0.953706 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of DR Congo. The Fisher statistics probability (P[F]) value of 0.409527 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Egypt. The Fisher statistics probability (P[F]) value of 0.376882 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Ghana. The Fisher statistics probability (P[F]) value of 0.709549 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Kenya. The Fisher statistics probability (P[F]) value of 0.622357 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Nigeria. The Fisher statistics probability (P[F]) value of 0.00000 shows that the CIT, PIT, CED and VAT as a whole significantly affect the GDP of South Africa. The Fisher statistics probability (P[F]) value of 0.394384 shows that the CIT, PIT, CED and VAT as a whole does not significantly affect the GDP of Uganda.

VI. Recommendations

In consonance with this study's findings, the following recommendations become imperative:
  i. African countries should put policies in place that will guarantee the continual growth in tax revenue from custom and excise duty, personal income tax, company income tax and value added tax which are progressive in nature. This can be achieved through proper implementation of policies that advance the mechanisms for generating these tax revenues which includes border checks and trailing of goods produced within the country. If imports are discouraged through lower company income tax and higher custom duties, this will improve local production and increase economic growth through upscale of gross domestic product.
  ii. Also, African countries should set a custom and excise duty rates that are investors friendly to encourage local investment and production. This will go a long way to discourage custom and excise duty evasion, encourage

foreign direct investment, increase local production, create employment and consequently lead to increase in the per capita income of the African countries.

iii. Although there seems to be an insignificant effect of company income tax, personal income tax, custom and excise duty and value added tax on gross domestic product of African countries, adjustment of these various tax policies by making them investors friendly can spur gross domestic product of African countries.

iv. To attract foreign direct investment, it is recommended that African countries should lower the various tax rates. South African should sustain their existing tax policies considering the significant effect tax revenue has on her economic growth.

References

[1.] Appah, E., (2010). The Problems of Tax Planning and Administration in Nigeria: The Federal and State Governments Experience. *Asian Journal of Research Banking and Finance,* 4(*12*), 1-14.

[2.] Ayeni, A. P., Ibrahim, J. & Adeyemi, A. O. (2017). Tax Revenue and Nigerian Economic Growth. European Journal of Accounting, Auditing and Finance Research, 5(11) 75-85.

[3.] Arnold, J. (2008). Do Tax Structures Affect Aggregate? *Empirical Evidence from a Panel of OECD Countries. OECD Economics Department Working Papers* (643).

[4.] Adegbie, F.F. & A.J. Fakile (2011). Company Income tax and Nigeria Economic development. *European Journal of Social Sciences*, 9(*1*), 109-121.

[5.] Appah, E. & Eze, G. P. (2013). A Causality Analysis between Tax Audit and Tax Compliance in Nigeria. *Journal of Economic Literature*, 12(*5*), 37-49.

[6.] Appah, E. (2010). The Problems of Tax Planning and Administration in Nigeria: The Federal and State Governments Experience. *Asian Journal of Research in Banking and Finance*, 4(*12*), 1-14.

[7.] Abiola, J. & Asiweh, M. (2012). Impact of tax administration on Government revenue in a developing economy: A case study of Nigeria. *International Journal of Business and Social Science*, 3(*8*), 35-43.

[8.] Angelopoulos, K. E. (2007). Tax-spending policies and economic growth: theoretical predictions and evidence from the OECD. *European Journal of Political Economy, 23* (4), 885-902.

[9.] Adereti, S.A., Sanni, M.R., & Adesina, J.A. (2011). Value added tax and economic growth of Nigeria. *European Journal of Humanities and social Sciences* 10(*1*).

[10.] Azubike, J. U. B. (2009). Challenges of tax authorities, tax payers in the management of tax reform Processes in Nigeria. *Journal of Management Accounting Research*, 42(*2*), 36- 42.

[11.] Appah E. & Ebiringa, O.T. (2012). Petroleum Profit Tax and Economic Growth in Nigeria. *International Journal of Management Sciences and Business* Research Volume 1(*9*).

[12.] Asaolu, T.O., Olabisi, T., Akinbode, S.O., & Alebiosu O.N. (2018). Tax Revenue and Economic Growth in Nigeria. *International Journal of Management & Development* ISSN 2394-3378, Vol.05, Issue 07 (2018) P. 72-85.

[13.] Babatunde, O. A., Ibukun, A. O., & Oyeyemi, O. G. (2017). Taxation Revenue and Economic Growth in Africa. *Journal of Accounting and Taxation*, 9(*2*): 11-22.

[14.] Chigbu, E. E. (2012). An empirical study on the causality between economic growth and taxation in Nigeria. *Current research journal of Economic Theory, 4* (2), 29-38.

[15.] Chigbu, E. E, Akujuobi, L.E, Appah, E. (2012). An Empirical Study on the Causality between Economic Growth and Taxation in Nigeria. *Curr.Res. J. Econ. Theory*. 4(2):29-38.

[16.] Chigbu, E. E. & Njoku, C. O. (2015). Taxation and the Nigerian economy (1994-2012). *Journal of Management Studies and Economic Systems*, 2(2), 111-128.

[17.] Dasalegn, M. J. (2014). Value Added Tax as a Tool for National Development in Ethiopia. *Research Journal of Finance and Accounting, 5*(*15*): 184-190.

[18.] Eke, O. A., Ekwe, M. C., & Ihendinihu, J. U. (2019). *Impact of Tax Revenues on Economic Growth of Nigeria*. Proceedings of the 8th International Conference of Accounting and Finance Research Association (AFRA), held 4th - 6th November, 2018.

[19.] Ezejelue, A.C & Ihendinihu, J.U. (2006) .*Personal Income Taxation in Nigeria*. LIins   Consult Nig, Okigwe.

[20.] Engen, Eric M., & Jonathan, S. (1996). Taxation and Economic Growth. *National Tax Journal* 49 (*4*):617-42.

[21.] Ebimobowei, A. & Ogbonna, G. N. (2012). Petroleum Profit Tax and Economic Growth: Cointegration Evidence from Nigeria. *Asian Journal of Business Management*, 4(*3*), 267-274.

[22.] Edame, G. E., & Okoi, W. W. (2014). The Impact of Taxation on Investment and Economic Development in Nigeria. *Academic Journal of Interdisciplinary Studies*. 3 (*4*): 209- 218. doi: https://doi.org/10.5901/ajis.2014.v3n4p209. Retrieved on 5/6/2020.

[23.] Gbato, A. (2017). Impact of Taxation on Growth in Sub-Saharan Africa: New Evidence Based on a New Data Set. *International Journal of Economics and Finance,* 2017, 9, 10.5539/ijef.v9n11p173. hal-01673738. Accesed 09/5/019.

[24.] Hungerford T (2012). Taxes and the Economy: An Economic Analysis of the Top Tax Rates since 1945 (Retrieved 12/6/2020 from http://democrats.way sandmeans.house.gov/sites/democrats.waysandmeans.house.gov/files/Updated%20CRS%20Report%2012%3A 13%3A12.pdf).

[25.] Hakim, T. A. (2016). Does goods and services tax stimulate economic growth? International evidence. *Journal of Business and Retail Management Research, 10* (3).

[26.] Igbasan, E. (2016).*Tax Revenue and Economic Growth of Nig*eria (1981-2015) Being a dissertation submitted in the Department of Accounting, School of Management Sciences. Babcock university Ilishan remo Ogun state Nigeria (published)

[27.] Ihendinihu, J.U, Ebieri J., & Ibanichuka, A. E. (2014): Assessment of the Long-Run Equilibrium Relationship between Tax Revenue and Economic Growth in Nigeria: 1986 to 2012. *The SIJ Transactions on Industrial, Financial & Business Management* (IFBM), 2(*2*) March-April, 2014.

[28.] Ibanichuka, E. L., Akani & Ikebujo, O. S.(2016). A Time Series Analysis of Effect of Tax Revenue on Economic Development of Nigeria. *International Journal of Innovative Finance and Economics Research* 4(*3*):16-23.

[29.] Joseph, F.I., Omodero, C.O., & Omeonu, O. M. (2019). The Role of Tax Revenue and Foreign Direct Investment in Promoting Economic Progress in Nigeria. *Annals of Spiru Haret University. Economic Series,* 10 (*19*). Issue 3, 2019.

[30.] Kiabel, B. & Nwokah, N. (2009). Boosting revenue generation by state governments in Nigeria: The tax onsultants option revisited. *European Journal of Social Sciences*, 8(*4*), 66-75.

[31.] Keho, Y. (2010). Estimating the growth-maximizing tax rate for Cote d'Ivoire: Evidence and Implications. *Journal of Economics and International Finance*, 2(*9*), 164.

[32.] Keho, Y. (2011). Tax Structure and Economic Growth in Cote dIvoire: Are Some Taxes Better Than Others? *Asian Economic and Financial Review*, 1(*4*), 226.

[33.] Keho, Y. (2013). The structure of taxes and economic growth in Cote d?Ivoire: An econometric investigation. *Journal of Research in Economics and International Finance,* 2(*3*), 39-48.

[34.] Kiabel B. D. & Nwokah N. G. (2009). Boosting Revenue Generation by State Governments in Nigeria: The Tax Consultants Option Revisited. *European Journal of Social Sciences*, 8(*4*).

[35.] Keho, Y. (2011). Tax Structure and Economic Growth in Cote d'Ivoire: Are Some Taxes Better than Others? *Asian Economic and Financial Review, 1*(4), 226-235.

[36.] Lawrence, K.N. (2015). The effect of value added tax on economic growth in Kenya. Int. Acad. *Journal of Economics and Finance* 5(*1*):10-30.

[37.] McBride, W. (2012). *What Is the Evidence on Taxes and Growth*? Tax Foundation, No. 207. Washington.

[38.] Riba, L. (2016).*The relationship between tax and economic growth: A South African perspective.* Dissertation presented to The Development Finance Centre, Graduate School of Business, University of Cape Town.

[39.] Nwawuru, C. E., Nmesirionye, J. A., & Ironkwe, U. I. (2018). *Analysis of the impact of value added tax on total federally collected revenue in Nigeria (1994-2012)*. A Paper presented at the 8th Annual Int'l Conference of AFRA held in December 2018 at UNICAL.

[40.] Nmesirionye, J. A., Nwawuru, C. E., & Ekwuruke, H. (2018). *Analysis of the impact of federally collectable taxes on economic growth of Nigeria (2000-2015)*. A Paper presented at the 8th Annual Int'l Conference of AFRA held in December 2018 at UNICAL.

[41.] Nwezeaku, N.C. (2005): *Taxation in Nigeria: Principles and Practice*, Owerri: Springfield Publishers.

[42.] N'YILIMON, N. (2014). *Taxation and Economic growth: An empirical analysis on dynamic panel data of WAEMU countries*. MPRA.

[43.] Osundina, C. K, Olanrewaju, G. O. (2013). Welfare effects of taxation on the Nigerian *Economy. Int. J. Humanit. Soc. Sci. Invent*. 8(2):76-82.

[44.] Ofoegbu, Akwu & Oliver, 2016). Empirical Analysis Of Effect of Tax Revenue on Economic Development of Nigeria.International Journal of Asian Social Science, 2016, 6(10): 604-613.

[45.] Ogbonna, G.N, & Appah E (2012), Impact of Petroleum Revenue and the Economy of Nigeria. *Current Research Journal of Economic Theory,* 4(*2*): 11-17, 2012.

[46.] Ogbonna, G. & Ebimobowei, A. (2012). Impact of tax reforms and economic growth of Nigeria: A time series analysis. *Current Research Journal of Social Sciences,* 4(*1*), 62-68.

[47.] Okafor, R. G. (2012). Tax revenue generation and Nigerian economic development. *European Journal of Business and Management,* 4(*19*): 49-57.

[48.] Okafor, U.O., (2012). Analysis of the impact of fiscal policy measures on capital formation in Nigeria. *Nigerian Journal of Management and Administration*, 5(*7*), 34-56.

[49.] Pfister, M. (2009). *Taxation for investment and development: An overview of policy challenges in Africa.* In A Background paper to the Ministerial Meeting and Expert Roundtable of NEPAD-OECD Africa Investment Initiative 2009 Nov (pp. 11-12).

[50.] Saibu, O. M. (2015). Optimal tax rate and economic growth. Evidence from Nigeria and South Africa. *Euro Economica, 34* (1).

[51.] Tanzi, and Zee,V. E. (2001). Tax policy for developing countries. *International Monetary Fund , 27*.

[52.] Ugwunta, O. D. (2015). Effect of distortionary and non-distortionary taxes on economic growth: Evidence from Sub-Saharan African countries. *Journal of Accounting and Taxation, 7*(*6*); retrieved on 23/7/2019 from106.https://doi.org/10.5897/JAT2015.0175.

[53.] Worlu, C. N. & Emeka, N. (2012). Tax revenue and economic development in Nigeria: A macro econometric approach academic. *Journal of Interdisciplinary Studies*, 21(*46*), 121-139.

[54.] Yaya, K. (2013). The structure of taxes and economic growth in Cote d'ivoire: An Econometric investigation. J. Res. Econ. Int. Fin. (JREIF) 3(2):39-48.

[55.] Xing, J. (2012). *Tax structure and growth: How robust is the empirical evidence?* Economics Letters, 117(*1*), 379-382. Accessed on 6/7/2019 on from https://doi.org/10.1016/j.econlet.2012.05.054.