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FEDERATION ACCOUNT ALLOCATION AND ECONOMIC DEVELOPMENT IN NIGERIA

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ABSTRACT:

In exploring the intricate relationship between federal allocations and Nigeria's economic development, this comprehensive study delved into the dynamics of financial disbursements across the federal, state, and local government levels from the federation account. The primary objective was to meticulously scrutinize the impact of these allocations on the overarching landscape of Nigeria's economic development. To conduct this investigation, the study employed a time-series approach, utilizing data extracted from the Central Bank of Nigeria's statistical bulletin spanning the years 2000 to 2020. The dependent variable chosen for this analysis was human capital development. Simultaneously, the study considered Federal Government's share, State Government's share, and Local Government's share from the federation account as independent variables. The methodological arsenal deployed included Ordinary Least Squares (OLS) for cointegration analysis, Granger causality test, unit root test, and the Vector Error Correction Model (VECM) to discern the long-term relationship between federal allocations and Nigeria's economic development. The results of the study revealed compelling insights into the influence of federal allocations on human capital development. Notably, the estimated model illustrated that federal allocation explained a substantial 91.7 percent of the variation in human capital development within the specified time frame. Further disaggregation of the data demonstrated that both federal and state allocations exerted a positive and statistically significant impact on human capital development. However, the study uncovered that while local government allocation displayed a positive effect, it did not attain statistical significance in relation to human capital development. Drawing from these findings, the study arrived at significant conclusions that federal allocations wield a substantial and meaningful effect on the country's economic progress. Recognizing the importance of these outcomes, the study recommends the establishment of a robust legal framework to underpin the allocation formula and spending policies across the three tiers of government.

KEYWORDS:

Federation Account, Economic Development, Human Development Index, Federal Government, State Government.

Introduction

Nigeria, often referred to as the "giant of Africa," has emerged as a rapidly growing nation both economically and demographically in the West African region. Despite being a former colony of the UK, Nigeria has made substantial strides, positioning itself as a potential global superpower for the African continent. With the largest economy on the continent, a substantial military budget, and active participation in West African and African affairs, Nigeria stands at the forefront of regional influence. Projected to become the fourth most populous country globally by 2040, with a population soaring from 184 million to 320 million, and an anticipated Gross Domestic Product (GDP) growth from $525 billion in 2014 to $4.2 trillion by 2040, Nigeria is poised for significant development on various fronts(Abbasov & Aliyev,2018).

However, amid this optimistic outlook, Nigeria grapples with multifaceted challenges. The World Bank's 2020 Human Capital Index ranked the country at 150 out of 157 nations, indicating a pressing need for enhanced human capital development. Persistent issues of inequality, both in income distribution and opportunities, continue to impede poverty reduction efforts. The scarcity of job opportunities lies at the heart of elevated poverty levels, regional disparities, and social and political unrest. Additionally, high inflation rates have adversely impacted household welfare, potentially pushing an additional 8 million Nigerians into poverty (Adeleye et al., 2017).

The study delves into the complex relationship between economic growth and development, emphasizing the nuanced differences between the two concepts. While economic growth focuses on sustained increases in per capita real income over time, economic development encompasses qualitative and quantitative improvements in political, social, and economic institutions, alongside income distribution (Pula & Elshani, 2017). Recognizing that development is a broader and more encompassing concept than mere economic growth, the study advocates for a comprehensive approach that addresses the multifaceted aspects of societal progress.A critical aspect of Nigeria's economic policies revolves around fiscal federalism, a system that allocates resources and responsibilities across different tiers of government. The study underlines the importance of fiscal federalism in achieving national development objectives, emphasizing the need for transparent, accountable, and decentralized governance structures. However, it raises questions about the efficacy of macroeconomic tools and their alignment with national development priorities (Okoye et al., 2019).

The perennial challenge of revenue allocation in Nigeria emerges as a focal point of concern. Despite continuous increases in revenue generation, the expected impact on economic growth remains elusive. Dissatisfaction with the current revenue-sharing formula, particularly the vertical distribution, is palpable. Grievances include perceived enrichment of the federal government at the expense of other tiers, inadequacy in addressing regional development challenges, and allegations of corruption at the federal level (Abbasov & Aliyev,2018).

The study underscores the imperative of scrutinizing the effects of fiscal federalism on Nigeria's economic development empirically. It aims to explore how past revenue allocations to the federal, state, and local governments have influenced economic development indicators such as the Human Development Index, per capita income, and poverty index. By doing so, the research seeks to provide valuable insights into the effectiveness of existing fiscal policies and their alignment with the overarching goal of sustainable economic development.

In conclusion, Nigeria's trajectory toward becoming a global economic powerhouse is marked by both promise and challenges. While economic growth and development remain at the forefront of policy agendas, the study advocates for a holistic and inclusive approach, addressing not only

macroeconomic indicators but also the intricate socio-economic fabric of the nation. Through comprehensive fiscal federalism, transparent governance, and equitable resource allocation, Nigeria has the potential to overcome its challenges and emerge as a beacon of sustainable economic development on the African continent.

Literature Review
Theoretical Framework

The impact of Statutory Allocation on Economic Development can be analyzed through the theoretical lenses of public goods and fiscal federalism. Within the realm of fiscal federalism, Agu (2010) emphasizes that discussions about the internally generated revenue of sub-national governments are contextualized.

Kremer's O-Ring Theory of Economic Development

The O-Ring Theory of Development extends economic theory to model production and employment, emphasizing the critical role of skill-matching along the chain of production. Developed by Kremer, the theory posits that the complementarity of skills is vital for high-value output, leading to spillovers, strategic complementarity, and multiple equilibria in education. This theory finds empirical relevance in understanding international economic development, particularly in the context of the 'brain drain' phenomenon, where skilled individuals migrate from less developed to wealthier countries(Abbasov & Aliyev,2018).

Buchan Fiscal Residuum Theory

Buchan (1982) proposes a meaningful approach to fiscal federalism by considering overall fiscal pressures on individuals. The Fiscal Residuum, as per Buchan, balances contributions made against the value of public services received. This theory emphasizes horizontal equity, where fiscal residuals should be equal for individuals or states. While acknowledging constitutional barriers, Buchan suggests "Unconditional Equalization Grants" as a second-best solution. This theory's relevance to Nigeria lies in addressing the fiscal disparities between states, especially those rich in revenue generation versus those with limited resources.

Intergovernmental Revenue Allocation Theory and Practice

Recognizing the potential drawbacks of over-centralization, many countries, including Nigeria, are now emphasizing fiscal decentralization. This involves devolving expenditure and revenue responsibilities to enhance overall government effectiveness, accountability, and economic efficiency. Intergovernmental fiscal analysis often begins with a focus on revenue allocation and mobilization alternatives, crucial for effective local governance and service delivery in developing countries.

Conceptual Review
Economic Development

Defining economic development involves distinguishing it from economic growth. Economic growth is quantifiable as an increase in aggregate output, rooted in theoretical frameworks by economists like David Ricardo and Robert Solow. Economic development, however, is a broader and more elusive concept, incorporating social and economic dimensions.

Measures of Economic Development

Human Capital Development: The Human Development Index (HDI), a tool devised by the United Nations, gauges social and economic development based on life expectancy, education, literacy, and standard of living. Education, measured by the education index, and disposable income are expected to positively influence HDI. Education enhances knowledge for healthier living, while increased disposable income enables better access to shelter, food, and medical care.

Concept of Fiscal Federalism

Federalism, a political concept dividing government power across national and subnational entities, gives rise to fiscal federalism, shaping financial relations between central and component units. In the Nigerian context, understanding the need for fiscal federalism and its underlying principles becomes imperative.In the words of Ecoma and Ecoma (2018), a federal system heavily reliant on a single region for 90 percent of federally collected revenue can breed sentiments of marginalization if the sharing mechanism inadequately compensates the primary resource-contributing region. This study delves into the nuances of resource transfer from the federal government to component units within the framework of Nigerian fiscal federalism theory and practice.

Empirical Review

OlogundeKapingura and Sibanda (2020) investigated the relationship between HDI and crude oil revenue (COR) in selected oil-producing African countries from 1992–2017 using the Pooled Mean Group (PMG) estimators on panel autoregressive distributed lag model (ARDL). Sustainable development was measured with the Human Development Index (HDI). The a priori expectation is that crude oil revenue will tank so much that many countries will record negative positions and might not be to meet fiscal demands in the long run if the situation is protracted. Empirical results revealed that there was no long-term relationship between COR and HDI.

Ojukwu and Odoemelam (2020) examined the nexus between petroleum profit tax revenue and standard of living using Gross Domestic Product per Capita (GDPpC) which is a component of HDI in Nigeria. Time series data from 1990-2019 were sourced through secondary sources from Central Bank of Nigeria (CBN) Statistical Bulletins, Federal Inland Revenue Service (FIRS) quarterly publications, World Bank Development Indicators and Trading Economics. The data were analyzed and tested using Augmented Dickey Fuller Unit Root Test, Co-intergration test, Vector Error Correction Model and Ordinary Least Square(OLS). The study found that PPT revenue has a long run positive and significant effect on Gross Domestic Product per Capita (GDPpC). It further found that PPT revenue has only a short run positive and significant effect on Gross National Income per Capita (GNIpC). Therefore, the study concludes that PPT revenue contributes positively and significantly to economic development.

Okoh et al (2021) investigated the impact of direct taxes on income redistribution in the context of Nigeria, using company income tax, personal income tax, petroleum profit tax and education tax as direct tax variables. The study covered the period 1990 to 2019 using annualized data set from Federal Inland Revenue Service (FIRS) and Central Bank of Nigeria Statistical Bulletin. The study employed the Fully Modified Least Squares (FMOLS) to analyze the data. Empirical results of revealed that, company income tax and education tax had insignificant negative effects on income redistribution, while personal income tax and petroleum profit tax had significant positive effects on income redistribution, thus reducing income inequality in the context of Nigeria.

Ideh (2019) assessed the relationship between components of PPT and HDI in Nigeria. For this purpose, the ex-post facto research design was adopted and secondary time series data were sourced from relevant records of appropriate authorities for the study period (2003 to 2017). The data were analysed using the Autoregressive Distributed Lag technique 30 alongside other necessary statistical tools. The results obtained from the study have far reaching policy implications. Specifically, we observed amongst others that even though petroleum profit tax stood as a major component of tax revenue, its relationship with HDI were negative.

Felix and Ibeanu (2020) examined the influence of CIT on HDI in Nigeria. Annual time series data, from CBN and FIRS from 1997 to 2018 was used. The study used regression analysis. The result showed that company income tax have significant effect on HDI. The implication of the finding is that the higher the amount of tax revenue generated, the higher the level of economic development experienced by the economy. This implies that taxes that have positive effect on economic development are direct taxes, thus direct taxes exert more significant influence on economic development of Nigeria than indirect taxes. This anomaly was attributed to dysfunctional ties in tax system, loopholes in tax law and inefficient tax administration. The lower the amount of revenue generated from tax the lower the quality of development to be witnessed.

Okoh, Edo, Akhigbodemhe and Edeoghon (2021) investigated the impact of direct taxes on income redistribution in the context of Nigeria, using company income tax, personal income tax, petroleum profit tax and education tax as direct tax variables. Methodology/Technique - The study covered the period 1990 to 2019 using annualized data set from Federal Inland Revenue Service (FIRS) and Central Bank of Nigeria Statistical Bulletin. The study employed the Fully Modified Least Squares (FMOLS) to analyze the data. Empirical results of revealed that, company income tax had insignificant negative effects on income redistribution.

Okoh et al (2021) investigated the impact of direct taxes on income redistribution in the context of Nigeria, using personal income tax. The study covered the period 1990 to 2019 using annualized data set from Federal Inland Revenue Service (FIRS) and Central Bank of Nigeria Statistical Bulletin. The study employed the Fully Modified Least Squares (FMOLS) to analyze the data. Empirical results of revealed that, personal income tax had significant positive effects on income redistribution, thus reducing income inequality in the context of 33 Nigeria.

Ogwuru and Agbaraevoh (2017) investigated the impact of VAT on HDI and GDP. The first model which had GDP as a proxy for economic growth showed that VAT had a positive and significant relationship with economic growth while the second model which had HDI as a proxy for economic development revealed that VAT has a negative and significant relationship with economic development proxy by HDI. This negative relationship could be due to non-utilization of the tax revenue from VAT on social services like education and health facilities.

Ocheni (2018) examined the impact of indirect tax on HDI of Nigeria, time-series data for the period 2000 to 2016 were used and the data were analyzed using OLS regression technique. The study found a positive and significant relationship between VAT and economic development proxy by HDI. Ibanichuka, Akani, and Ikebujo (2016) studied the effect of tax revenue on the economic development of Nigeria for the period 1993 to 2014 to find out if there is an association among VAT, and Human Development Index. The study made use of the ordinary least regression (OLS) analysis technique and found a positive but insignificant relationship between Value Added Tax and HDI, which is in

contrast with the findings of Ocheni (2018) who found a positive and significant relationship between VAT and HDI.

Obaretin and Uwaifo (2020) examined the impact of Value Added Tax on HDI in Nigeria for the period 1994 to 2018. The study employed a longitudinal research design. The data used in the study were generated from the office of the Federal Inland Revenue Service and United Nation Data bank and the data generated were analyzed using the Auto Regressive Distribution (ARDL) regression estimation technique. The result from the finding unveils that VAT has a positive and significant impact on HDI in Nigeria. The study recommended that Government should ensure that the revenue that is generated from VAT is expended on projects that will impact on the citizens of the country and regularly tax audit should be carried out on registered VAT collectors to ensure that the tax collected is remitted to the appropriate authority.

Metu, Maduka, Eze and Adujua (2019) investigated how fiscal policy can be designed to promote inclusive growth as well as identify the most effective fiscal policy instrument that can lead to inclusive growth in Nigeria, using annual data from 1980 to 2017. The Structural Vector Autoregressive (SVAR) model was adopted for the analysis. The result shows that government capital expenditure is a more effective fiscal policy instrument for achieving inclusive growth in Nigeria. The dominance of the shocks to tax revenue has a higher impact on unemployment than on poverty and per capita GDP growth rate. Based on these findings, it is recommended that the Nigerian government should strengthen the mobilization of tax revenue and channel it towards government capital expenditure in order to promote inclusive growth in Nigeria. This study empirically estimates a unified measure of inclusive growth for Pakistan and determines the impact of macroeconomic stability, financial deepening and structural changes on inclusive growth over the period from 1987 to 2016. Inclusive growth is measured by income growth and distributions which are calibrated by combining GDP per capita growth and income inequality GINI coefficient. We apply the microeconomic concept of a social mobility function at the Macroeconomic level to measure inclusive growth that is closer to the absolute definition of propoor growth. The study applied a two-step 37 methodology to capture the empirical estimations, in the first step the study estimated inclusive growth by social function through combining the income distribution and of GDP per capita and in the second step incorporated it in time series analysis by applying standard unit root tests and autoregressive distributed lag model (ARDL) approach of conintegration. The results are supported with standard diagnostic tests. Our results indicate that macroeconomic stability and structural changes are foundations for achieving inclusive growth. Other indicators which are included in the analysis have also some important implications, the role of external sector could also be positive with terms of trade fostering greater inclusiveness, while financial deepening has also prominent implications on inclusive growth. Financial development can lead to encourage more inclusiveness in the country.

Christian and Caroline (2019) investigated the impact of fiscal policy and institutional quality on inclusive growth in Nigeria from 1985-2017. This was achieved through the use of two models, with the human development index (HDI) and per capita Gross Domestic Product (PGDP) being the main dependent variables used to capture the degree of inclusiveness of growth in Nigeria. These equations were estimated using the ordinary least squares method of estimation. The study found that fiscal policy has a significant effect on inclusive growth in Nigeria while quality of domestic institutions was found to have an insignificant impact on inclusive growth in Nigeria. Based on the findings, the study recommended that government should not neglect fiscal policy as it is invaluable for a more inclusive growth; increase recurrent expenditure on economic services, transfers and capital

expenditure, and public spending on the provision of social and community services should be effectively monitored to avoid misappropriation of funds. Also recommended was the fight against corruption to strengthen institutional quality in Nigeria.

Taghizadeh, Yoshino and Shimizu (2018) assessed the effects of Japanese tax policy on income inequality which is an indicator of inclusive growth during the period of 2002Q1 38 to 2017Q3. The vector error correction model that develops in this research, shows that Japanese tax policy were effective in reducing the income inequality. Variance decomposition results show after ten periods almost 87.15% of the forecast error variance of the inequality is accounted for by its own innovations and 3.76% of the forecast error variance can be explained by exogenous shocks. On the other hand, the total tax contributed in reducing the inequality measure, respectively, by 6.65% and 1.96% after 10 periods.

Asogwa (2015) examined impact of fiscal policy on inclusive growth in Nigeria used three approaches. First, a decomposition of public expenditures in Nigeria was conducted so as to evaluate the relative allocation to inequality reducing sectors (education, health, social transfers/services) with other sectors over a period of time. Second, the benefit incidence of the expenditures on education for all the income quintiles was analyzed. Third, the study measured the incidence of the different tax revenue components in Nigeria to ascertain whether they are progressive or regressive and its redistributive impact. The findings of the study showed that the current structure of public expenditure and taxes are not progressive enough and have limited powers to reduce inequality and enhance inclusive growth.

Yaru, Mobolaji, Kilishi and Yakubu (2015) evaluated the inclusiveness of Nigeria's economic growth, while at the same time, examining the impact of public expenditure on inclusive growth in Nigeria. The study used secondary data for the period 1960 to 2012. Principal component analysis and regression analysis were used to analyze the data. The results showed that only the impact of state governments' expenditure was significant at 10 percent. It was however found that expansionary fiscal policy could undermine inclusive growth if it leads to inflation. The result suggested that excessive trade openness could inhibit the inclusiveness of the growth process. The study therefore recommended that public expenditure does not have strong influence on inclusive growth in Nigeria.

Kolawole (2015) examined the relationship among public spending, institutional quality and inclusive growth in Nigeria over the period 1995-2013. The study used the Dickey-filler GLS unit root test to ascertain the order of integration of the series. Also, due to the small sample size of the data, it employed the ARDL bound testing technique to determine the long-run relationship among the variables. Furthermore, it adopted the vector error correction mechanism to find the short-run relationship among the series. Consequently, the study found that in the long run public spending on health; economic freedom and real GDP growth rate significantly influenced inclusive growth positively in Nigeria. Thus, it was concluded that public spending in the form of redistributive public spending on health, institutional quality as economic freedom and real GDP growth rate propelled inclusive growth in Nigeria. It was therefore recommended that government should direct its policy strategies on increasing productive public spending on health, education and infrastructure. Also, the government should formulate and implement institutional strengthening policies in areas of labour freedom, investment freedom, property rights and other life enhancing programmes that can specifically help reduce inequality and poverty in the country.

Summary of Empirical Literature and Knowledge Gap

Table 1 below summarizes the empirical review of the prior researchers on the study variables of budget allocations and economic development. For each of the study, the result, research gaps and how current study addresses this gap have been shown.

Table 1: Webometric Analysis of Reviewed Literature

Empirical studies	Design and focus	Methodology	Findings	Gaps	Focus of this study
Okoye, Omankhanlen, Okoh, Urhie And Ahmed (2019)	the role of government in the growth and development process in Keyan	OLS, time series data of 33 years.	The study shows significant short-run negative effect of lagged current expenditure on economic growth. It also shows strong positive effect of lagged capital expenditure on growth.	This study is foreign and focused on the role of government in economic growth.	The present study focuses on the effect of federal government allocations on nigeria economic development.
Asghari, Heidari and Zonouzi (2014)	Investigated how government expenditure affects economic growth in selected countries between 1990 and 2011.	The Generalized Least Squared (GLS) regression method	The study indicates non-linear relationship between the variables. It further presents a negative relationship between government consumption expenditure and economic growth which implies that high levels of consumption diminish capacity for productive investment thereby impeding growth	This study is foreign and focused on the role of government in economic growth.	The present study focuses on the effect of federal government allocations on Nigeria economic development.
Pula and Elshani (2017)	The nexus between public expenditure and economic growth in order to ascertain which of Keynes or Wagners laws apply to Kosovo	The ordinary least squares method of regression was employed in carrying out this analysis	The result shows government expenditure as the driver of growth and thereby validates the Keynesian argument for Kosovo. and that one-way causality from economic growth to government revenue as well as bi-directional causality between foreign direct investment and economic growth and between export and economic growth	This study is foreign and focused on the role of government in economic growth.	The present study focuses on the effect of federal government allocations on Nigeria economic development.
Zareen and Qayyum (2014)	the relationship between government size and economic growth in Pakistan	The ordinary least squares method of regression was employed in	provided evidence that large government size retards		The present study focuses on the effect of federal government allocations on Nigeria economic

		carrying out this analysis	growth		development.
Ifarajimi and Ola (2017)	The impact of government expenditure on economic growth in Nigeria between 1981 and 2015	The ordinary least squares method of regression was employed in carrying out this analysis	The result of the study indicates strong impact of government expenditures on administration and economic services on economic growth	the study only focused on public expenditure and economic growth giving knowledge gap on economic development	The present study focuses on the effect of federal government allocations on Nigeria economic development
Chiawa, Torruam and Abur (2012)	a cointegration and causality analysis of the nexus between government expenditure and economic growth in Nigeria	The ordinary least squares method of regression was employed in carrying out this analysis	the result shows that capital and recurrent expenditures increase in response to output growth	the study only focused on public expenditure and economic growth giving knowledge gap on economic development	The present study focuses on the effect of federal government allocations on Nigeria economic development

Source: Compiled from Empirical Literature Review (2022)

Figure 1: Operational framework
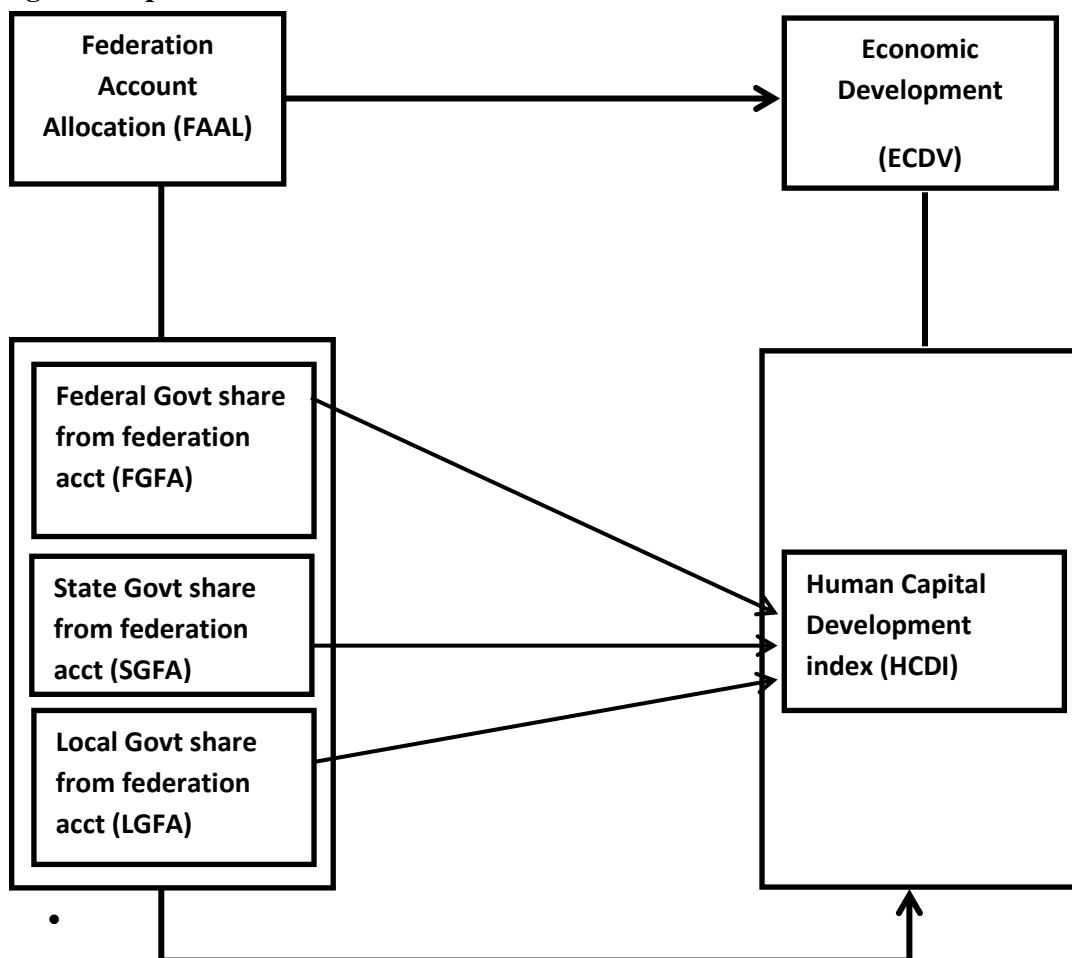
Methodology

This study adopts the ex-post facto research design approach in analyzing data.In order to actualize the objectives outlined in chapter one of this study, secondary data will be employed. This study will employ secondary data sourced mainly from the Central Bank of Nigeria (CBN) statistical bulletin and World Bank data base.Determining the long run relationship between variables is important as it

enables the understanding of the effect that one have against the other. However, each endogenous variable is explained by its lagged, or past, values and the lagged values of all other endogenous variables in the model; which eliminates the use of any exogenous variables in the model (Gujarati, 2004). Since the methodology allows comprehensive information about the dynamics of the interactions, long-term trends are easily explained. This enables shocks within the regressions and the system to be easily seen.The study adopts the Ordinary Least Square method of Vector Error Correction Mechanism (VECM) and granger causality. The Vector Error Correction Mechanism (VECM) however, minimizes the shortcomings of the Vector Auto Regression Model (VAR) procedure while retaining its attributes as it incorporates the co-integrating variables by forcing the model to converge in the long run. It equally allows for deviations, which are corrected through a series of adjustments that are dictated by the long run relationship.However, the absence of any co-integrating vectors amongst them suggests the need to use Vector Autoregressive model. Irrespective of the number of variables used in the performance of the VEC, the first vector is the most important co-integrating vector because it is the one associated with the highest Eigen value. The number of lagged difference terms to include is often determined empirically, the idea being to include enough terms so that the error term is serially uncorrelated (Gujarati, 2004). In addition, when two-time series are co-integrated, then regression results may not be spurious and the usual t and F test are valid.

The study models are specified below:

HDI =f(FGFA, SGFA, LGFA)   3.1

Where:

HDI   =   Human Capital Development Index

FGFA   = Federal Government share of federation account

SGFA   = state government share of federation account

LGFA   =local Government share of federation account

μ_0 =   Error Term

$\beta_1 - \beta_4$ =   Coefficient of Independent Variables to the Dependent Variables

β_0 =   Regression Intercept

Table 2: Operational measures of Variables and A-priori Expectations

Variable	Measurement	Notation	Expected relationship
Human capital development	Percentage	HDI	Dependent variable
Federal Government allocations	Allocation from federation account	FGFA	+
State Government allocations	Allocation from federation account	SGFA	+
Local Government allocations	Allocation from federation account	LGFA	+

Method of Data Analysis

The main tool of analysis is the Ordinary Least Squares (OLS) using the multiple regression method for a period of 34years, annual data covering 1990– 2020.

Stationarity (Unit Root) Tests

The study investigates the stationarity properties of the time series data using the Augmented Dickey Fuller (ADF) test. According to Nelson and Plosser (1982) and Chowdhury (1994) there exists a unit root in most macroeconomic time series. While dealing with time series, it is necessary to analyze whether the series are stationary or not. Since regression of non-stationary series on other non-stationary series leads to what is known as spurious or nonsense regression causing inconsistency of parameter estimate.

Co-integration Test (The Johansen' Test)

It has already been warned that the regression of a non-stationary time series on another non stationary time series may lead to a spurious regression. The important contribution of the concept of unit root and co-integration is to find out if the regression residual are stationary. Thus, a test for co-integration enables us to avoid spurious regression situation. This study employed Johansen Multivariate Co-Integration Test to ascertain if there is the existence of a long run equilibrium relationship among time series variables.Johansen (1988, 1991) pointed out that a linear combination of two or more non stationary time series may be stationary, if such a stationary linear combination of two or more non-stationary time series exists, the non-stationary time series are said to be co-integrated and may be interpreted as long-run relationship among the variables. The lag length is one and is based on the Akaike (1969) information criterion (AIC).

Data Presentation, Analysis and Discussion Of Findings

The estimates and results of the models and techniques as formulated in chapter three of this work are presented in this chapter. The short run regression results of the monetary policy variables, the unit roots test, the test of co-integration test are presented. The granger causality test was used to examine the causal relationship running from the independent variables to dependents variable and from dependents to independent variables. Vector Error correction model was use to estimate the long-run relationship between fiscal allocations and Nigeria economic development. The Ordinary Least Square (OLS) estimates for the models and the discussion of hypotheses and findings were also presented.

Data Presentation

Table 3: Time Series Data for Model One

Year	HCD	FGFA	SGFA	LGFA
2000	0.439	17.88	3.56	1.68
2001	0.459	17.34	4.91	1.56
2002	0.47	13.96	3.38	1.12
2003	0.389	14.84	3.95	2.15
2004	0.491	14.66	4.29	2.07
2005	0.491	13.12	3.98	2.13
2006	0.47	10.60	3.35	1.81
2007	0.47	11.18	3.20	1.64
2008	0.48	11.40	4.28	1.81
2009	0.48	8.28	2.24	1.22
2010	0.49	8.63	2.44	1.29
2011	0.49	9.67	2.80	1.48
2012	0.5	9.04	2.56	1.35
2013	0.5	9.24	2.60	1.37
2014	0.5	8.37	2.36	1.25

2015	0.54	6.14	1.56	0.86
2016	0.504	4.41	0.99	0.58
2017	0.527	1.85	1.27	0.72
2018	0.53	2.46	1.76	0.96
2019	0.532	2.11	1.47	0.84
2020	0.353	1.64	1.25	0.65

Source: Computed from Central Bank of Nigeria

HDI　　=　　Human Capital Development Index
FGFA　= Federal Government share of federation account
SGFA　= State government share of federation account
LGFA　=Local Government share of federation account

Stationarity Test

Federal Allocations and Human Capital Development in Nigeria

Table 4: Unit Root Test

Variable	ADF Statistic	MacKinnon @ 1%	5%	10%	Order of integration	Summary	Conclusion
ADF @ Level							
HCD	-2.753452	-3.808546	-3.020686	-2.650413	I(0)	Not stationary	Accept HO
FGFA	-0.855162	-3.808546	-3.020686	-2.650413	I(0)	Not stationary	Accept HO
LGFA	-1.294454	-3.808546	-3.020686	-2.650413	I(0)	Not stationary	Accept HO
SGFA	-1.341151	-3.808546	-3.020686	-2.650413	I(0)	Not stationary	Accept HO
ADF @ Difference							
HCD	-4.199656	-3.831511	-3.029970	-2.655194	1(I)	Stationary	Reject HO
FGFA	-6.095341	-3.886751	-3.052169	-2.666593	1(I)	Stationary	Reject HO
LGFA	-6.177163	-3.886751	-3.052169	-2.666593	1(I)	Stationary	Reject HO
SGFA	-6.336309	-3.886751	-3.052169	-2.666593	1(I)	Stationary	Reject HO

The time series properties of the variables used in the analysis was investigated using Augmented Dickey-Fuller test. The test was run with specification of trend and intercept in the model. The ADF statistics for the test are presented in the table above. It can be seen from the Table 4 above that the unit root test results, using the ADF unit root test suggest that all series are stationary at order I (1). Therefore, the Engle and Granger (1987) can be employed.

Table 5: Co-integration Test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.756424	49.91031	47.85613	0.0316
At most 1*	0.536165	53.07613	29.79707	0.0323
At most 2	0.247637	8.479843	15.49471	0.4156
At most 3	0.149364	3.073656	3.841466	0.0796
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None*	0.756424	46.83418	27.58434	0.0321
At most 1*	0.536165	34.59629	21.13162	0.0482
At most 2	0.247637	5.406187	14.26460	0.6899
At most 3	0.149364	3.073656	3.841466	0.0796

From Table 5, the results of the Johansen co-integration test show that we adopted the alternate hypotheses of one co-integrating equation at the 5% level of significance. This implies that, there is linear combination of the variables that are stationary in the long run and also confirms the non-existence of a long-run relationship between federal allocation and human capital development in Nigeria.

Table 6: Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
FGFA does not Granger Cause HCD	19	0.37871	0.6915
HCD does not Granger Cause FGFA		2.62682	0.1075
LGFA does not Granger Cause HCD	19	0.56556	0.5805
HCD does not Granger Cause LGFA		2.89123	0.0889
SGFA does not Granger Cause HCD	19	1.57486	0.2416
HCD does not Granger Cause SGFA		5.04172	0.0224

Pair wise causality tests were run on model one with an optimal lag of 2. The results are presented in Table 7 above. The researcher's interest here is to establish the direction of causality between the dependent variables and the independent variables from 2000-2020. In the models there is a uni-directional causality from human capital development to state government federal allocations. We accept null hypotheses for other variables.

Table 7: VAR Lag Order Selection Criteria
Endogenous variables: HCD FGFA LGFA SGFA

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-23.40194	NA	0.000210	2.884415	3.083244	2.918064
1	9.929798	49.12045*	3.57e-05*	1.060021*	2.054168*	1.228270*
2	23.46221	14.24464	6.11e-05	1.319768	3.109231	1.622616

The most popular of the information criteria are the Akaike information criteria (AIC), and Bayesian information criteria (BIC) (Stock & Watson, 2012). Since the value proposed by both AIC, HQIC is lag 1, the optimal lag length in this study is 1.

Table 8: Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(HCD(-1))	1.932251	0.651556	2.965596	0.0974
D(FGFA(-1))	0.009119	0.007463	3.221991	0.0462
D(LGFA(-1))	0.082145	0.049907	1.645943	0.2415
D(SGFA(-1))	-0.034020	0.034966	-3.972938	0.0332
D(HCD(-2))	-1.197163	0.451948	-2.648898	0.1179
D(FGFA(-2))	0.010302	0.007497	1.374165	0.3031
D(LGFA(-2))	0.103336	0.036989	2.793716	0.1078
D(SGFA(-2))	-0.051285	0.019099	-2.685143	0.1152
D(HCD(-3))	-0.821816	0.296862	-2.768338	0.1095
D(FGFA(-3))	-0.005179	0.020232	-0.255999	0.8219
D(LGFA(-3))	0.011870	0.031240	0.379971	0.7405
D(SGFA(-3))	0.001419	0.029840	0.047563	0.9664
C	0.018794	0.010572	1.777771	0.2174
ECM(-1)	-0.410316	0.704852	0.582131	-0.6194
FITTED^2	-7.015144	2.655253	-2.641987	0.1184

R-squared	0.989713	Mean dependent var		-0.002118
Adjusted R-squared	0.917705	S.D. dependent var		0.053937
S.E. of regression	0.015473	Akaike info criterion		-5.874791
Sum squared resid	0.000479	Schwarz criterion		-5.139603
Log likelihood	64.93572	Hannan-Quinn criter.		-5.801712
F-statistic	13.74443	Durbin-Watson stat		1.513823

Prob(F-statistic)	0.009824

The corresponding sign of Error Correction Term (ECT) is negative but not significant. The negative sign of (ECT) indicates a move back towards equilibrium following a shock to the system in the previous year. The adjusted R^2 from the model proved that the independent variables can explain 91.7 percent changes on the dependent variables. The models are statistically significant from the value of f-statistics and probability. However, the ECM coefficient indicates that the models can adjust at the speed of 41 percent annually. The coefficient of the variables defines the effect of the independent variables (federal allocation) on the dependent variables (human capital development) at various lags.

Discussion of Findings

Federal Allocations and Human Capital Development in Nigeria

The estimated model one of the study was formulated to study the relationship between federal allocations on human capital development in Nigeria. The study found that federal allocation explained 91.7 percent variation in human capital development within the time scope of this study. This implies that federal allocations explained significant proportions of the variations in Nigeria human capital development while 8.3 percent were explained by factors not captured in the model. the study found that federal allocation from the federation account, and state allocation have positive and significant effect on human capital development in Nigeria while local government allocation have positive and no significant effect on human capital development in Nigeria.

The positive effect of federal allocation on Nigeria human capital development confirms our a-priori expectations and in line with theories such as public expenditure theories. Empirically, the findings is in contradict the findings of Okoye, Omankhanlen, Okoh, Urhie And Ahmed (2019), Asghari, Heidari and Zonouzi (2014) that level of economic development plays a vital role in the interaction between growth and government spending. Specifically, the research shows that government consumption negatively affects growth in developed economies but enhances it in developing economies, the findings of Gunalp and Gur (2002) was observed for most of the African and Latin American countries due, largely, to weak institutions, unstable economic and political systems. Pula and Elshani (2017) showed one-way causality from economic growth to government revenue as well as bi-directional causality between foreign direct investment and economic growth and between export and economic growth.

Conclusion

From the findings, the study concludes that Federal Government share from the federation account (FGFA) has relationship with Human development capital (HCD).From the findings, the study concludes that there is significant relationship between State government share from federation account (SGFA) and Human development capital (HCD). From the findings,the study concludes that local government share from federation account (LGFA) has no relationship with Human development capital (HCD).

Recommendations

From the findings, the study makes the following recommendations:
  i.   There is urgent need for reforms in the sharing formula from the federal account to allocate more funds to states and local governments and enhance effective utilization of allocated fund
  ii. There should legal framework that can back the utilization fund from the federation account to enhance economic development in Nigeria.

iii.   Federal government should reform its public expenditure framework; more spending should be directed to the real sector and investment human capital as this increases economic development.

iv.   Federal allocation to the states should be directed to infrastructural development as development of infrastructure enhances economic development.

v.   The local government should embark on projects that enhance the development of the people and reduce poverty from the fund allocated such as provision of economic life touching projects.

vi.   All factors that serve as barrier to effective utilization funds from the federation account should be discouraged while factors to encourage effective and productivity of the funds should be encouraged.

vii.   There is need to set committee at all tier of the government to ensure productivity utilization of the allocated funds to achieve desired economic development.

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