Published by
Department of Economics,
Faculty of Social Sciences,
University of Port Harcourt.
P.M.B 5323, Choba.
economics@uniport.edu.ng
www.uniport.edu.ng

Compiled and Printed by
S.P. Shapea Publishers
No. 1 Rosy Avenue, Port Harcourt
Rivers State, Nigeria.
Email: s.p.shapeapublishers@gmail.com,
Cell: 08038707054

© Department of Economics, University of Port Harcourt, 2018

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ISSN: 0795-33x

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MATERNAL MORTALITY IN NIGERIA: AN IMPACT ANALYSIS

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Abstract

Given the perplexing and high rate of preventable maternal mortality in Nigeria, its attendant consequences on future human capital development, and its effect on the family this paper, examines the impact analysis of maternal mortality in the country via its non health causative agents. The ordinary least square technique and simple percentage were adopted in the analysis of the data. The data were sourced from the Nigeria Demographic and Health Survey (NDHS) 2013 document. The findings from the data analysed indicated that a negative and significant relationship exists between mother's educational attainment (MEI) and maternal mortality (MMR) in the country. A negative and significant relationship also exists between the place of delivery (PCD) and maternal mortality. Mother's decisions concerning their healthcare (DMH) has a negative effect on maternal mortality (MMR). The result also shows that there is a negative but insignificant relationship between other measures of women autonomy (DHP and DVR) and maternal mortality. Given the above findings the paper, therefore recommends increase level of girl child education through award of scholarship and free anti-natal care as to encourage delivery at health centres.

Key Words: Maternal mortality, Mothers Status and Nigeria Demographic and Health Survey.

Introduction

The arrival of a new-born baby on earth is an event that brings Joy to the mother, father and relatives and it is accompany with fanfare. But, for women in developing countries and Nigeria in particular, this is not often the case, as the pregnancy journey is a perilous one and a death trap with much maternal mortality (Aboyeji, Ijaiya, & Fawole, 2007).

Pregnancy and childbirth is a constant source of a challenge to women, very risky and complications trotted leading to precocious death among women in Nigeria. This ugly incidence has turned the supposed pleasant experience (childbirth) that is accompanied by fanfare into a nightmare because of the end result (premature death) (Nwosu, 2012).

According to World Bank estimate cited in the vanguard (2018) out of the 303,000 maternal deaths in the World emanating from complications of pregnancy and childbirth in 2015, 58,000 maternal deaths occurred in Nigeria. Nigeria maternal mortality rate stood at 821 per 100,000 live births (World Bank, 2018). Mr Bill Gates, the co-chair of the Bill and Melinda Gates Foundation, stated that Nigeria is one of the most unsafe places in the globe to give birth and the 4th country with the worst maternal death rate ahead of Sierra Leone, Central African Republic and Chad (Vanguard, 2018). What a gloomy picture of the giant of Africa that plays the big brother role to sisters' countries but can not handle preventable maternal death. This shows some level of insensitive by government and callousness among leaders, in the country.

The report of the 18th General membership meeting on Reproductive Health Supplies Coalition in Brussels, Belgium, revealed that Nigerian women have a life time risk of maternal mortality of 4.62 per cent, the fertility rate of 5.71 and annual births of almost 7 per cent (Vanguard, 2018).

Maternal death results in the loss of a productive member of the household, economic and social hardship for children (Felix, 2017, Turmen & Abauzhar, 1994, Herrera-Torres, Cruz & Burgu, 2006). The unissen cited in the Vanguard (2018) stated that "A child whose mother dies in childbirth is three to ten times more likely to die before his or her second birthday". The implication is that maternal death has adverse consequences on future human capital development, by cutting short the life span of the child, through poor nutrition and dropping out of school especially where the mother is the breadwinner (Felix, 2017).

The leading medical causes of maternal mortality are categorized into two direct and indirect causes. The direct causes account for about 80 per cent,

while the indirect causes account for about 20 per cent (Kvale, Oslen, Hinderaker, Ulstein, &Bergsjo2005). The direct causes comprise of severe bleeding, infections, unsafe abortion, enclampsia and obstructed labour. The indirect causes are anaemia, cardiovascular disease, tuberculosis, malaria, hepatitis and aids related conditions.

The fifth goal of the millennium development goals is reducing maternal mortality ratio by three-quarter by 2015, but this has been extended to 2030 as captured in the sustainable development goals.

Previous scholars (Aboyeji, Ijaiya & Fawole, 2007,Trivedi&Pasriya, 2007,Olapade & Lawoyin, 2011) have examined the clinical causes of maternal mortality. Other scholars (Felix, 2017, Hagman 2013, Abansa, Idris & Akanegbu, 2013) examined the maternal mortality issue from the social infrastructure provision perspective. The point of departure of this study from earlier works is that this study centres on non-health related factors and there effect on maternal mortality. This is what motivated this study; thus the objective of this study is to carry out an impact assessment of maternal mortality in Nigeria.

The rest of the paper is organized as follows: section two dwells on maternal mortality in Nigeria and steps taken by government to curb it. Section three is the literature review and section four centres on methodology. Section five is data analysis and discussion of results and section six concludes the study.

Maternal Mortality in Nigeria and Steps Takento Curbthe Menace

Maternal mortality is a topical issue because of its inclusion as the fifth goal in the millennium development goals (MDGs). The fifth goal of the MDGs is reducing maternal death by three-quarter by 2015. The alarming rate of maternal mortality in Nigeria has caused some women to develop phobia for pregnancy and childbirth. This phobia is what drives them to seek solace from faith clinics and herbal homes when they are pregnant because they (pregnant women) believe that these faith clinics and herbal homes have control over the spiritual realm which can manipulate pregnancy outcomes.

The trend in maternal mortality rate from 1990 to 2015 is given below. According to World Bank (2017), Nigeria in1990 had 1350 maternal death per 100,000 lives birth, 1250 for 1995, 1170 for 2000, 946 for 2005, 807 for 2010 and 814 maternal death per 100, 000 lives birth in 2015. What a heart aching trend. The sustainable development goal (SDGs) 3.1 is the reduction of global maternal mortality ratio to less than 70 per 100,000 live births (World Health Organization 2017). This fixed rate reflected in the sustainable development goal document is a myth and not real given the kid gloves with which we handle issues concerning maternal mortality in Nigeria, the level of infrastructural decay, and brazen corruption that has become a household phenomenon in the country.Sanusi (2012) captured the Nigerian ugly infrastructural investment scenario thus:

> The current level of infrastructure deficit in Nigeria is the major constraint towards achieving the nation's vision of becoming of the 20 largest economies in 2020 because about 70 percent of 193,000 kilometers of roads in the country is in poor condition; the power outages the nation experiences amount to over 320 lost days a year; over 60 percent of the population lack access to electricity; over $13 billion is spent annually to fuel generators, and Nigeria which once had one of the most extensive railway systems in Africa could now barely boast of a functional route either for passenger or freight.

The government has adopted several strategies to curb maternal death in Nigeria. This range from user fee charge, antenatal care, training of skilled birth attendants to partnership with world health organisation and the Gill and Melinda foundation reproductive health initiative. The others include primordial prevention, primary prevention, secondary and tertiary prevention.

Primordial prevention this entails nipping the occurrence of risk factors linked with the incident of cases of maternal mortality. Some examples of primordial prevention are health campaign against harmful cultural practices such as female genital mutilation, early childhood marriage, forced marriage etc.

Primary prevention has to do with prevention of maternal mortality through modifications of behaviours and exposures that give rise to the pervasiveness of maternal death (Ogu and Ephraim, 2018).

Secondary prevention involves the early discovery and prompt treatment of pre-clinical pathological changes occurring during pregnancy. This is achieved via training and retraining of skilled birth attendants at designated health facilities at the time of delivery (Ephraim, 2018). Tertiary prevention seeks to moderate the negative effect caused by the disease on the patients function, longevity and quality of life. Examples are cardiac rehabilitation following a cardiomyopathy, modifying risk factors (Goodrum, 2001).

Literature Review

Olopade and Lawoyin (2008) examined maternal mortality in a Nigerian maternity hospital. They identified the primary causes of maternal mortality to be haemorrhage, sepsis, enclampsis etc.

World Bank (2003) in a paper tagged Investingin Maternal Health**:** Learning from Malaysia and Sri Lanka, established that full use of existing social infrastructure interventions, especially comprehensive emergency obstetric care, would reduce maternal mortality by 75 per cent. The above result buttresses the fact that maternal mortality is a product of government insensitivity and recklessness.

Goyaji and Rao (1998) in their study community-based case control study of maternal mortality in rural west Maharashtra, India, discovered that maternal education was not associated with an increased risk of maternal mortality, but a higher level of education in men was protective against maternal mortality.

Nwankwo (2018) examined the effects of public health spending on maternal mortality in Nigeria. He employed a panel data regression technique and the result indicates that public health spending is imperative in explaining reduction in maternal mortality in Nigeria.

Kirigia, Oluwole, Mwabu, Gatwiri and Kainuyu (2008) in their study established that maternal mortality is inversely related to economic growth

(GDP) in the WHO Africa region. The reason deduced for this are: maternal death can reduced the quantity and quality of labour force and by so doing the number of people involve in active production. Next a mother is a caregiver, thus, her death entail the loss of a caregiver compelling the father to reallocate time to provide care to the bereaved children. This entails the loss of economically productive time. Thirdly, the high funeral costs associated with maternal death at time may force family to sell some of the productive assets (land, farm machinery and equipment) to pay for the funeral. Fourthly, maternal death has negative consequences on future human capital development process, on quality of labour force and hence future level of economic growth. Bokhari, and Pablo (2007)examined the relationship between government health expenditures and health outcomes using instrumental variables techniques. Their findings established a negative and significant relationship exist between government health expenditures and maternal mortality.

Kravdal (2002) investigated the relationship between education and fertility in sub-Saharan Africa: individual community effects. The findings establish that education at the community level is inversely related to fertility rates and by extension maternal mortality. Empirical literature abounds both in developed and developing countries about the negative relationship between female education and a decrease in fertility (Bbaale & Mpuga 2011, Sackey, 2005, Vavrus & Larsen, 2003).

A number of factors accounted for the negative relationship between female education and fertility decline, among them are: first the more the number of years a woman stays in school, the longer she postpones giving birth to her first child. The delayed birth affect negatively the number of children she will be willing to deliver (Bbaale&Mpuga, 2011).

Among the causes of maternal death, severe anaemia is seen as the primary cause of maternal death in less developed countries (Lindsay, 1997). Severe anaemia in pregnancy is documented as the primary cause of 8 to 23 per cent maternal death in most hospital (Rush, 2000). The overall effect of HIV/AIDs on pregnancy related maternal death remains ambiguous (Lekeur, Khlat and Halembokaka (2005).

Method of Study

The methodology of this study is anchored on Adeyele and Ofoegbu (2013) simple regression method. The explained variable is maternal mortality and the explanatory variables include mother's educational attainment and mother status. Mother's status measures the ability of women to control resources and make decisions. In the 2013 women were asked questions pertaining to certain aspect of their autonomy, including a number of household decisions in which women participates. Such decisions include place of delivery, decision on mother's health and decision on household purchase.

The data for this study are from the Nigeria Demographic and Health Survey (NDHS) 2013. The 2013 Nigeria Demographic and Health Survey is the fifth comprehensive and latest survey conducted in Nigeria as part of the Demographic and Health Surveys (DHS) programme. The 2013 NDHS is a comprehensive natural representative survey of 40,320, women aged 15 to 49 and 18,229 men aged 15 to 49 randomly selected households within the six geo-political zones in the country. Maternal mortality estimates are based on information from survivorship of sisters. This information dates back to the seven-year period before the 2013 survey (NDHS, 2013).

Model Specification

MMR = f(MET, MST)
MST = f(PLD, DMH, DHP, DNHR)

Where:

MET = Mother's Educational Attainment
MMR = Maternal Mortality rate. This is defined as the death of a woman while she is pregnant or within 42 days of the termination of her pregnancy, irrespective of the cause of death (WHO, 2012)
MST = Women Status
PLD = Decision on the place of delivery
FMH = Decision on Mother's healthcare
DHP = Decision on Household purchases
DVR = Decision on visits to family or relatives

Empirical literature established has linear relationship between maternal mortality and its determinants (MET, PLD, DMH, DHP and FVR). Thus, the researcher deems it necessary to fit a regression model as specified below.

$$MMR = a_0 + a_1\ MET + a_2 PLD + a_3\ DMH + a_4\ DHP + a_5\ DVR$$

Data Analysis

Descriptive Statistics

Table1:Mother's Educational Attainment

Educational Attainment	Frequency	Percent	Cumulative Percent
No Education	15, 462	39.7	39.7
Some primary	2,103	5.4	45.1
Completed primary	5,141	13.2	58.3
Some secondary	5,881	15.1	73.4
Completed secondary	6,738	17.3	90.7
More than secondary	3,623	9.3	100
Total	**38,948**	**100**	

Source: *Nigeria Demographic and Health survey (NDHS)2013.*

Table 1 indicates that out of a total of 38,948 mothers, 15,462 had no formal education and this represented39.7 per cent of the total number of women that duly responded to the questionnaire. 5.4 per cent(2,103) had some primary education, 13.2 (5141) per cent of the women had completed primary education. 15.1 per cent (5881) women had some secondary education, while 17.3 per cent (6,738 women) had complete secondary education and 9.3percent (3,623 women) had more than secondary education. This buttresses the fact that there is high level of illiteracy among mothers, and all things being equal, this will impinge negatively on them in terms of utilizing the existing health care facilities and increase the risks of maternal death. Again lack of basic education makes them ill prepared for parenthood and its attendant consequences.

Table 2: Place of Delivery

Place of Delivery	Frequency	Per cent	Cumulative Percent
Public health sector facility	**8413**	21.6	21.6
Private health sector facility	**428.4**	11.0	32.6
Home	**278**	66.2	98.8
Other	**39**	0.1	98.9
Missing	**412.8**	1.1	100
Total	**38948**	**100**	

Source: *Nigeria Demographic and Health Survey (NDHs) 2013*

Table 2 below indicates the various places of child delivery. 21.6 per cent (8413) women delivered their babies at a public health sector facility. 11 per (4284) women delivered their babies at a private health sector facility. 66.2 per cent (25,784) women delivered their babies at home, while 0.1 per cent (39) women delivered their babies outside the three identified places above. 1.1 per cent is unaccounted for. The above break down shows that higher percentages of children were delivered at home without any trained medical personnel assistance. This may partly explain the mind boggling rate of maternal deaths recorded in the country.

Table 3: Decisions on Mother's Health Care

Response	Frequency	Per cent	Cumulative Per cent
Mainly Wife	2415	6.2	6.2
Wife/husband jointly	12,697	32.6	38.8
Mainly husband	23,680	60.8	99.6
Someone else	78	0.2	99.8
Other	-	0.0	99.8
Missing	78	0.2	100
Total	**38948**	**100**	

Source: *NDHS 2013*

Table 3 above shows the degree of decision control as admitted by women. 6.2 per cent (2415) of the women (respondents) admitted that decision about their health care solely rest on them. 32.6 per cent (12,697) admitted the decision about their health care is jointly taken by them and their husband. 60.8 per

cent (23,680) women also admitted that the decision concerning their health care is the sole responsibility of their husband. 0.2 per cent (78) women attested the decision concerning their health care is taken by someone else, and 0.2 per cent is missing. The implication of the above descriptive analysis portray that women in Nigeria have little control concerning decision relating to their health care. This may partly explain the reason for the high rate of maternal mortality experience in the country within the period under review.

Table 4: Decisions on Major Household Purchases

Response	Frequency	Per cent	Cumulative Per cent
Mainly Wife	2181	5.6	5.6
Wife/husband jointly	12, 463	32.0	37.6
Mainly husband	24,109	61.9	99.5
Someone else	78	0.2	99.7
Other	38	0.1	99.8
Missing	78	0.2	100
Total	**38, 948**	**100**	

Source: *NDHS 2013.*

From table 4 above 5.6 per cent of respondents (women) admitted that they take decision singularly concerning major household purchases. 32 per cent of respondents admitted that major household purchases were a joint decision (wife/husband) while 61.9 per cent of respondents attested such decision were solely the husband's responsibility. The above breakdown shows the level of women autonomy in Nigeria is very weak.

Table 5: Decision about Visits to her Family and Relatives

Response	Frequency	Per cent	Cumulative Per cent
Mainly Wife	3077	7.9	7.9
Wife/husband jointly	15,384	39.5	47.4
Mainly husband	20,331	52.2	99.6
Someone else	78	0.2	99.8
Other	0.0	0.0	99.8
Missing	78	0.2	100
Total	**38, 948**	**100**	

Source: Nigeria *Demographic and Health Survey (NDHS) 2013*

Table 5 indicates that 52.2 per cent of the respondents admitted that decision regarding visits to her family or relatives is made by their husbands. 39.5 per cent of the respondents stated that decision regarding visits to family or relatives were jointly determined by wife and husband. Only 7.9 per cent of the decision was done mainly by the wife.

Table 6: Case Processing Summary

Cases	**N**	**Percent**
Valid	36, 458	94.7
Excluded	2, 490	5.3
Total	38948	100.0

Source: *Author's Computation.*

Table 7: Reliability Statistics

Cronbach's Alpha	Number of items
0.61	6

Source: *Author's Computation*

Table7 presents the reliability result of the determinants of maternal mortality. The Cronbach's Alpha in the table above shows the strength of significance of the determinants. The Cronbach's Alpha value 0.61 indicates that the conclusions that could be inferred from the variables included in the model are reliable given that the reliability is above an average weight of 0.5. Given the above there is need to take a step further to estimate the model.

Table 8: The Ordinary Least Square Multiple Regression

Coefficients (a)							
	Unstandardized coefficients		**Standard coefficients**			**Collinearity statistics**	
Model	**B**	**Std. Error**	**Beta**	**T**	**Sig**	**B**	**Std Error**
(Constant)	11.483	1.083		8.164	.000***		
MET	-0.813	.046	-.074	-5.218	.000***	.681	1.632
PLD	-0.076	.089	-.004	-4.383	.000***	.635	1.589
DMH	-0.691	.237	-.093	-4.564	.000***	.414	1.703
DHP	-0.003	.251	-.021	-.089	.834	.401	2.201
DVR	-0.214	.183	-.032	1.347	.612	.387	2.402
a Dependent Variable: MMR							

Source: *Author's Computation, 2019.*

The result of the estimated multiple regression in table 8 above shows that the mother's educational attainment (MET) has a negative coefficient (-0.813) and it is statistically significant. The implication is that an inverse relationship exists between the mother's educational attainment (MET) and maternal mortality in Nigeria. The result depicts that the more mother's attend school level of maternal mortality in the country will reduce by 0.813. This is evidenced in the Nigeria Demographic Health Survey (NDHs 2013) where about 60.3 per cent of mothers had different levels of educational attainment. The place of delivery (PLD) has a negative coefficient (-0.076) and it is statistically significant as shown in the above table. This implies there is a negative relationship between the place of delivery by mothers and maternal mortality (MMR). This further buttressed the fact the more mothers deliver at available health facilities, maternal mortality will reduce by 0.076 per cent. This is depicted in the Nigeria Demographic and Health Survey (NDHS, 2013), where 66.2 per cent of deliveries were carried out at the homes of the mothers. This without any prejudice partly explains the high incidence of maternal mortality experience in the country.

The degree of women autonomy (the degree of women participation in the decision that affect them and that of the family) and maternal mortality was tested using the three decision criteria identified in NDHS 2013. There is a negative and significant relationship between the degrees of mother's involvement in decision making concerning their health and maternal mortality. This implies that as mothers are more involved in decisions making concerning their health care, there will be reduction in the maternal mortality rate all things being equal. Thus, mothers should be given the opportunity to have a say with regards to their health, this will avail them the opportunity to have access to medical personnel that can give them their professional counselling and the necessary treatment.

A negative and insignificant relationship exists between decision making regarding large household purchase (DHP) and maternal mortality. A negative and insignificant relationship exists between decision making regarding visits to family and relative and maternal mortality.

Table 9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.783	.572	.416	.810	2.153

a. **Predictors:** (constant), MET, PLD, DMH, DHP, DVR
b. **Dependent variable:** MMR

Source: *Author's Computation,2019.*

The above result for the test of goodness of fit (the Adjusted R-square=0.416), implies that the explanatory variables in the model explain about 42 per cent of the variations in maternal mortality (dependent variable). The remaining 58 per cent of the variations in maternal mortality is explained by variables not captured in the model. The F-statistic value is 13.876 and its probability value of 0.000 shows that the model has a good fit and it is statistically significant. The Durbin-Watson statistic (DW=2.153) indicates the absence of autocorrelation in the model specification.

Conclusions

Given the result from the data analysed the paper concludes as follows: Women educational attainment is low since 39.7 per cent of them are without any formal education. This party explain the high incidence of maternal mortality in the country, because without any education there is the tendency for the women to marry early and bear more children which increase their risk of maternal mortality. Lack of formal education by women reduced their chances of using medical facilities because of the user fee charges; this forces them to patronize faith clinic and herbal homes. This is in collaboration with Felix (2017) who stated that access to education and health lead to a reduction in maternal mortality.

The place of delivery (mother's home) has a negative effect on maternal mortality, because dangers signs are not easily detected and adequate treatment measure are not taking to avert maternal death because the traditional birth attendant lack the requisite skills. About 66.2 per cent of delivery within the study period is at home, and this may partly explain the high rate of maternal mortality in the country.

Women participation in decision concerning their health has a negative impact on maternal mortality. This is because 60.8 per cent of decisions about women health care are taking by their husbands. This portrays low level of women autonomy in the country and may partly also explain the high rate of maternal mortality in the country.

Recommendations

The following recommendations are put forward:

(1) Women should be allowed to make decision concerning their health care because it is them that bear the brunt of maternal death.
(2) Anti-natal care should be giving free of charge as to encourage women to deliver in health facilities.
(3) The girl child education should be encouraged through award of scholarship.

References

Abansa, S. A. Y., Idris, A., & Akanegbu, B. N. (2013). Impact of Health Expenditure on Economic Growth in Nigeria 1984-2009.*European Journal of Management Sciences* 1(2):31-40.

Aboyeji, A.P., Ijaiya, M.A. & Fawole, A.A. (2007). Maternal Mortality in a Nigeria Teaching Hospital-a Continuing Tragedy. *Tropical Doctor*, 37:83-85.

Adeleye, I. T., & Ofoegbu, D. I. (2013). Infant and Child Mortality in Nigeria: An Impact Analysis. *International Journal of Economics Practices and Theories* 3(2): 122-132.

Bbaale, E. & Mpuga, P. (2011). Female Education, Contraceptive Use, and Fertility: Evidence from Uganda. *Consilience: The Journal of Sustainable Development*. 6(1): 20-47

Bokhari, F. A. S., Yunwei, G., & Pablo, G. (2007).Government Health Expenditures and Health Outcomes. *Health Econ*. 6:257-273.

Felix, J.M. (2017). Social Infrastructure, Maternal Mortality and Economic Growth in Nigeria. An Unpublished Ph.D Thesis, University of Calabar, Calabar.

Hagman, N. (2013). Maternal Mortality, Gender And Access To Health Services. The Case of Ghana. *Journal of Economic Growth.* 4(2):301-321.

Herrera-Torres, E., Carmen, M. Cruz-Burgu, J.L. Ronled-Herinandez, G., Patricia, C. & Montoya-Gonez, G. (2006). La Economic del group Domestic Determinant Demourte Material Mujeres Indigenes de chiapa, mexico pen. *American journal of public health.* 19(2):69-78

Kravdal, O. (2002). Education and Fertility in Sub-Saharan Africa: Individual and Community Effects. *Demography,* 39(2):233-250.

Kirigiu, J. M., Oluwole, D., Nwabu, G. M., Gativiri, D., & Kainyol, H. (2006). Effects of Material Mortality On Gross Domestic Product (GPP) in the WHO African region. *African Journal of Health Sciences.* 8(2): 24-37

Kvale, G., Oslen, B.E., Hinderake, S.G., Ulstein, M. & Bergsjo, P. (2005). Maternal Deaths in Developing Countries: A preventable tragedy .*Journal Biomedical Research*. 6(3) : 89-98

Nigeria Demographic & Health Survey (NDHS), (2013). National Population Commission) Abuja.

Nwosu, N.P. (2012). Maternal mortality in South-Eastern Nigeria: A case study of Nkwoegwu health centre in Ohuhu area of Abia State. *Global Voice of Educators,* 1(1): 1-8.

Ogu, R.N., & Ephraim, E. (2018). Prevention of Maternal mortality in Nigeria: Public Health to the rescue. *Journal of Gynaecology and Women's Health.*10(1).001-004

Olopade, F.E. & Lawoyin, T.O. (2008).Maternal Mortality in Nigeria Maternity Hospital. *Journal of Biomedical Research,*11:267-273.

Sackey, H.A. (2005). Female Labour Force Participation in Ghana: The Effects of Education. *African Research Consortium Paper,*150 Nairobi.

Trivedi, S.S. & Pasrija, S. (2007). Teenage Pregnancies and their Obstetric Outcomes. *Tropical Doctor,* 37:85-88.

Turmen, T. & Abauzalir, C. (1994).Safe Motherhood. *International Journal of Gynaecology and Obstretrics.* 46. 145-153.

Vavrus, F. & Larsen, U. (2003).Girls' Education and Fertility Translation: An Analysis of Recent Trends in Tanzania and Uganda. *Economic Development and Cultural Change.* 51 (4):945-976.

MONETARY POLICY AND UNEMPLOYMENT IN NIGERIA

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Abstract

This study investigated the link between monetary policy and unemployment in Nigeria from 1986 – 2016. Employing unemployment rate as the dependent variable and interest rate, monetary policy rate, foreign exchange rate, inflation rate and money supply as independent variables, the ordinary least square (OLS) estimation technique was used to check the relationship existing between these variables. The study revealed a link between unemployment and money supply, inflation rate and monetary policy rate. The Unit root test revealed that all variables were stationary at order one, the Johansen Co-integration test revealed a long run equilibrium relationship among the variables while the estimated error correction mechanism (ECM) revealed that 32 percent of disequilibrium is corrected for in the long run. Based on findings, the study recommended that as a control rate to other monetary variables, the monetary policy rate should be moderately placed; also, as a requirement for steady and continuous growth in investment necessary for the creation of jobs, price level and foreign exchange rate should be stable and low.

Keywords: Monetary Policy, Unemployment, Nigeria.

Introduction

The role of monetary policy in influencing macroeconomic objectives lies in the formulation and implementation strategies by the appropriate authorities . As an economic tool employed by the government to aid in the realisation of set out economic aims, monetary policy involves a combination of measures designed to regulate the values, supply and cost of money in an economy in conformity with the level of economic activity, for the purpose of achieving broad economic objectives such as price stability, balance of payment equilibrium, employment creation, output growth and sustainable development (Ajudua, Ojima & Okonkwo, 2015). The authorities do these manipulations by

targeting money supply and interest rate while putting into consideration the prevailing economic situation.

Monetary policy adopted is either expansionary or restrictive. An expansionary policy is employed in a situation where aggregate demand is low in relation to the capacity of the economy to produce goods and services while restrictive comes to play when aggregate demand is high in relation to the capacity of the economy to produce goods and services (Ahuja, 2013). In the case of expansionary, it is designed to stimulate the growth of aggregate demand through increase in the rate of money supply thereby making credit more available and interest rates lower; eventually promoting employment level in the economy through rise in investment ceteris paribus. On the contrary, if the quantity of money is reduced or restricted, money income will rise slowly so that consumers spend less and funds for investment are difficult to acquire thereby decreasing aggregate investment.

Irrespective of the regulating tools adopted, the goals of monetary policy remains the same and the desire of the policies employed has a way on the economy with its success depending on the operating economic environment, institutional framework adopted and the choice and mix of the tools used. Indirect control is mostly used by market based economies and involves the control of the money stock through the manipulation of the sources of the monetary base by the application of the open market operation (OMO), and reserve requirements among other, so as to impact monetary aggregates used for monetary control (Aladejar, Danjuma and Nyputen, 2017). This has been predominantly operational in Nigeria, since the Structural Adjustment Programme (SAP) era. Prior to SAP in Nigeria, there was the use of direct monetary policy control which rest on establishing limits on interest rates, credit and lending and include direct credit control, direct interest rate control and direct lending to banks. During this era, monetary policy objectives was centred on maintenance of confidence in the naira through measures to stabilise domestic wages and prices, control of inflation, reduction of unemployment rate, promotion of productive capacity, capital formation and Balance of Payment (BOP) stability etc (Anyanwu, 1993). This era, according to Soludo (2008) was a stifled era as nominal interest rate was lowest while inflation was high. Real interest rate was negative which led to low savings, low investment and low economic growth. Monetary policy in Nigeria during

the SAP era (deregulation era) aimed at stimulating output and employment, promote domestic and external stability through market oriented saving and efficient resources allocation (Ajudua *et al*, 2015). Interest rate was targeted as it helps in the mobilisation of financial resources so as to ensure efficiency in resource utilisation in the production process thereby increasing the level of investment which in turn improve employment rate. Monetary policy has a dual mandate of guaranteeing high employment rate and price stability. Overtime, economists have employed monetary policy to achieve almost every conceivable economic objective with economic growth and low level unemployment often high in the list (Essien, *et al.,* 2016).

In Nigeria, unemployment has become a prominent feature of the economy with its associated high poverty level and misery index. As the day goes by, unemployment and its consequences continue to increase. There is a huge churn out of all kinds of graduates into the labour market with little or nothing to engage them in terms of employment. In November 2016, the federal tax agency received 700,000 applications for 500 vacancies while in May 2016, nearly a million people applied for 10,000 employment spaces in the Nigerian Police Force. As at 2017, Nigeria recorded an unemployment rate of about 18.8% (NBS, 2017). A report from the World Poverty Clock in 2018 put Nigeria as the poverty capital of the world, overtaking India as the country with the most extreme poor people in the world. The study further stated that of about 180 million Nigerians, 86.9 million Nigerians now live in extreme poverty representing about 46.7% of its estimated population. This goes to show that the country's full potentials of labour-surplus have not been fully exploited.

Monetary policy and unemployment link in Nigeria depends on the instruments used and the economic condition of a country. A close look at the economic trend shows that with the adoption of the liberalization and deregulation of the economy in 1986 which also encompassed privatization of state enterprises, liberal trade and investment policies, a market determined exchange rate was adopted which led to the depreciation of the naira to the dollar, leading to the inability of many firms to import raw materials required to support their output levels, this was due to fall in the value of the naira and an increase in general price level which subsequently led to a fall in real

wages thereby weakening the purchasing power of people. Consequently, there was a fall in national aggregate demand. In reply to the situation, there was a reduction in the workforce in the manufacturing sector due to retrenchment and no employment into the public sector. Thus, there was a swell in the idle workforce leading to an increase in unemployment in the country.

With Fasanya, Onakoya and Agboluaje (2013) positing that monetary policy innovations have real and nominal effects on economic parameter, this study seeks to investigate the relationship between unemployment and monetary policy in Nigeria.

Theoretical Underpinnings

Monetary theory aims at understanding and explaining the impact of changes in money supply on the price level, real income, output and employment. The Keynesian economics advocates government intervention to help overcome the lack of aggregate demand to reduce unemployment and increase economic growth. The Keynesians posited that unemployment can be reduced through a reduction in interest rates and government investment in infrastructure. According to the Keynesian monetary transmission mechanism, given the assumption that the economy is at less than full employment equilibrium, the built-in-policy transmission mechanism works through the financial system to the real sector via interest rate (Gbosi, 2005). The effect of money supply on economic activity works through interest rate which determines investment in the economy (Ahuja, 2013). Determined by equilibrium between demand for money and supply of money, interest rate effect on money supply provides a mechanism through which changes in money supply affect the goods market which determines level of economic activity. Movements of interest rate result in increase/decrease in money supply which increases/decreases investment leading to an increase/decrease employment via the multiplier.

The classical monetary theory is hinged on Irvin Fisher's quantity theory of money. According to Fisher, he posited that other things remaining unchanged, as the quantity of money in circulation increases, the price level also increases in direct proportion while the value of money decreases and vice versa (Jhingan, 1997). To him, the quantity of money is the main

determinant of the price level. He further assumed that the rise in commodity prices would precede the increase in interest rate which was regarded as the main channel of firms operating costs. The rise in commodity price would lead to an increase in the firm's profits followed by increase in investment leading to a rise in employment (Okonkwo, Egbulonu and Emerenini, 2015).

Empirical Studies

Okonkwo, Egbulonu & Emerenini (2015) examined the impact of monetary policy on manufacturing in Nigeria. They concluded that money supply (MS) and credit to private sector (CPS) exert great pressure on manufacturing.

Analysing monetary transmission in Croatia using the Granger causality test and error correction model, Vizek (2006) revealed that monetary policy affects industrial output through changes in the exchange rate and money supply, while interest rate changes do not have any influence.

Nwosa and Saibu (2012) investigated the transmission mechanism in Nigeria on sectoral output growth in Nigeria for the period 1986 to 2009. Using quarterly data, the study showed that interest rate channel was most effective in transmitting monetary policy to agriculture and manufacturing sectors.

Using simple regression, Olorunfemi and Dotun (2008) investigated the impact of monetary policy on Nigeria's economic performance. They revealed that there exist a negative relationship between interest rate and GDP and inflation and GDP.

Imoughele and Ismaila (2014) examined manufacturing sector output and monetary policy variables in Nigeria and found out that there exist a long run relationship between manufacturing sector output and monetary policy variables in their study indicating a self-adjusting mechanism for correcting any deviation of the variables from equilibrium.

Using panel data analysis, Göçer (2013) examined the relationship between changes in money supply in terms of total lending of the banking sector and unemployment in fourteen selected European from 1980-2012 . His findings showed a reduction in unemployment rate in these countries being attributed to increase in lending.

Damachi (2001) studied past policy measures for solving unemployment problems in Nigeria. He opined that there is a strong need for institutional collaboration and improved coordination of policy measures for dealing with unemployment.

Methodology

This study adopts an ex-post facto research design, since it involves secondary time series data obtained from the CBN Statistical Bulletin for 31 years ranging from 1986 to 2016. Independent variables employed include Interest Rate (INR), Monetary Policy Rate (MPR), Foreign Exchange Rate (FEX), Inflation Rate (INF) and Money Supply (MS). Unemployment Rate (UER) was the dependent variable. The technique of analysis is the ordinary least square due to its BLUE features and the method of analysis is the Error Correction Mechanism (ECM) which correct for all short run errors so as to achieve a better long run relationship while stipulating the duration of adjustment. Pre-estimation tests were carried out to smooth the dataset and have glimpse to the long run relationship among the variables through augmented Dickey Fuller unit root test and Johansen cointegration test respectively. Also, a post-estimation test was carried out to be sure of the correctness of the model estimated. This was done through residual error test and stability test.

Model Specification

The model specification in this study streams from the theoretical underpinnings and is thus presented as follows;

$$Y_t = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon_t \quad ---------(1)$$

Equation (1) explains that X_1, X_2, X_3, X_4 and X_5 are the presumed exogenous variables that explain any variation in Y_t. α is the intercept, $\beta_1, \beta_2, \beta_3, \beta_4 \, and \, \beta_5$ are output elasticities with respect to individual input or macroeconomic factor, which are the parameter to be estimated, while, ε_t is the error term of the model.

Equation 1 could be transformed as follows;

$$UER_t = \alpha_0 + \beta_1 INT + \beta_2 MPR + \beta_3 FEX + \beta_4 INF + \beta_5 MS + \varepsilon_t \quad --(2)$$

Equation (2) is the long run model of linear relationship between the dependent variable Unemployment Rate (UER) and other independent variables (Interest Rate, Monetary Policy Rate, Foreign Exchange Rate, Inflation Rate and Money Supply). These variables exhibited the presence of non stationarity properties in their level, this therefore call for a short run model. The choice of Error Correction Model (ECM) is beckoned on the fact that all included variables became linearly integrated at first difference, and they were equally cointegrated, implying that both the long run and short run model are relevant as all short run drift will eventually converge to long run equilibrium.

Apriori expectations include, $\beta_1 < 0, \beta_2 < 0, \beta_3 < 0, \beta_4 < 0, \beta_5 > 0$

Analysis and Presentation of Result

Descriptive Analysis of the Model

Table 1: Descriptive Analysis of variables employed

	UER	INT	MPR	FEX	INF	LnMS
Mean	12.72581	18.82839	13.61097	88.79971	19.63935	7.600395
Median	12.20000	17.98000	13.50000	111.9433	12.90000	7.600402
Maximum	28.50000	29.80000	26.00000	253.4900	72.80000	7.606885
Minimum	1.800000	10.50000	6.130000	2.020600	5.400000	7.593878
Std. Dev.	9.282563	3.833177	3.882549	70.24839	17.54331	0.003971
Skewness	0.400130	0.907165	0.851709	0.208855	1.677795	-0.004597
Kurtosis	1.829662	4.450254	4.866329	1.996112	4.730203	1.796759
Jarque-Bera	2.596391	6.968578	8.247054	1.527104	18.41088	1.628857
Probability	0.273024	0.030676	0.016187	0.466008	0.000100	0.442892
Sum	394.5000	583.6800	421.9400	2752.791	608.8200	205.2107
Sum Sq. Dev.	2584.979	440.7974	452.2257	148045.1	9233.034	0.000410
Observations	31	31	31	31	31	31

Source: Authors' Computation from output, 2018

The descriptive analysis of the variables employed in the model shows that during the period of study, inflation level averaged 20%, interest rate is 19%, and exchange rate is N88.80K per dollar. Also, unemployment rate was 12.72% reaching a maximum of 28.5%. Interest rate averaged 18.8%.

Unit Root Test

Table 2: Summary of Unit Root Test Results Using Augmented Dickey Fuller (ADF)

Variables	5% Critical Value	ADF Test Statistic at Level (I(0))	ADF Test Statistic at 1st Differencing (I(1))	Prob at 1st Differencing	Status I(d)
UER	-2.967767	-0.279133	-6.805769	0.0000	I(1)
INT	-2.991878	-2.507037	-4.860252	0.0007	I(1)
MPR	-3.004861	-2.960547	-4.689564	0.0013	I(1)
FEX	-2.967767	-0.884902	-3.462390	0.0167	I(1)
INF	-2.986225	-2.056053	-3.430434	0.0194	I(1)
LnMS	-2.891322	-2.154328	-3.332155	0.0026	I(1)

Source: Author's computation from output

The table above shows the stationarity tests of the variables employed. Variables became stationary at the point where the value of ADF test statistic is greater than the critical value at 5%. At level, variables employed were not stationary. They became stationary after first difference implying that all variables in the model are integrated of order 1, denoted by I(1). The study further carried out a co-integration test, using the Johansen cointegration technique.

Cointegration Analysis

Sample (adjusted): 1988 2016
Included observations: 29 after adjustments
Trend assumption: Linear deterministic trend
Series: UER INT MPR FEX INF

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.749404	73.49423	69.81889	0.0247
At most 1*	0.639015	53.36078	47.85613	0.0369
At most 2	0.334206	19.01869	29.79707	0.4916
At most 3	0.174519	7.222195	15.49471	0.5520
At most 4	0.055644	1.660306	3.841466	0.1976
At most 5	0.043124	1.194122	2.4871231	0.1833

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.749404	40.13345	33.87687	0.0079
At most 1*	0.390158	34.34209	27.58434	0.0483
At most 2	0.334206	11.79649	21.13162	0.5679
At most 3	0.174519	5.561889	14.26460	0.6698
At most 4	0.055644	1.660306	3.841466	0.1976
At most 5	0.052341	1.544901	2.991281	0.1772

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

As shown above, the trace statistic indicated 2 cointegrated equations at 5% critical value. Thus, the null hypothesis of no cointegration is rejected. Similarly, the maximum eigenvalue indicated two (2) cointegrating equation at 5% level with Max-eigen statistic. Therefore, the null hypothesis of no

cointegration is rejected. Both results imply the existence of long-run relationship among the variables in the model. Nevertheless, since the variables in the model are all integrated at order one (I(1)), then the error correction mechanism (ECM) is a possibility and it equally indicates that the long run static OLS is not spurious and meaningful since the short run dynamic model will at the end adjust to long run equilibrium after overcoming the short run drift.

Error Correction Model

Dependent Variable: D(UER)
Method: Least Squares
Sample (adjusted): 1986 2016
Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.223624	0.021265	3.211243	0.0176
D(INT)	-0.040987	0.024314	-1.911121	0.1426
D(INT(-1))	-0.074382	0.029225	-2.035139	0.0521
D(INT(-2))	-0.046386	0.031399	-1.425421	0.1765
D(MPR)	-0.054390	0.030124	-2.997765	0.0445
D(MPR(-1))	-0.048634	0.028684	-2.832048	0.0499
D(MPR(-2))	-0.065683	0.027623	-2.377814	0.0549
D(FEX)	-0.000358	0.000274	-1.306036	0.2394
D(FEX(-1))	-0.000422	0.000277	-1.523630	0.1784
D(FEX(-2))	-0.036473	0.020646	-1.766592	0.1277
D(INF)	-0.000393	0.000225	-3.746551	0.0313
D(INF(-1))	-0.000656	0.000333	-2.966441	0.0462
D(INF(-2))	-0.000701	0.000331	-2.118909	0.0784
D(LNMS)	3.427710	0.597164	3.543229	0.0317
D(LNMS(-1))	2.102598	0.562987	3.734716	0.0022
D(LNMS(-2))	-0.299229	0.368303	-0.812453	0.4301
ECM(-1)	-0.320016	0.030586	-2.993214	0.0354

R-squared	0.739340	Mean dependent var	0.020821
Adjusted R-squared	0.665431	S.D. dependent var	0.011953

S.E. of regression	0.009804	Akaike info criterion	-8.384667
Sum squared resid	0.000577	Schwarz criterion	-7.547389
Log likelihood	89.19190	Hannan-Quinn criter.	-6.066480
F-statistic	7.894534	Durbin-Watson stat	1.965433
Prob(F-statistic)	0.035214		

The parsimonious error correction mechanism in the table above revealed that monetary policy rate (MPR) money supply (LNMS) and inflation rate (INF) at either current or lagged values appeared with expected sign and significantly influenced unemployment rate Nigeria at 5% critical level. Interest rate and Foreign Exchange Rate appeared with expected sign but were not significant. The R squared of 0.739 revealed that about 74 percent changes in unemployment rate in Nigeria is explained by the independent variables in the model, with no indication of serial auto correction seen as suggests by DW of 1.96. The error correction coefficient was rightly signed and significant at 5 percent with 32 percent disequilibrium in unemployment rate is corrected for in the long run.

Causality Test

Pairwise Granger Causality Tests
Sample: 1986 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
INT does not Granger Cause UER	29	2.25742	0.1264
UER does not Granger Cause INT		1.87172	0.1756
MPR does not Granger Cause UER	29	1.24878	0.3048
UER does not Granger Cause MPR		2.26791	0.1253
FEX does not Granger Cause UER	29	0.84970	0.4400
UER does not Granger Cause FEX		1.25475	0.3032
INF does not Granger Cause UER	29	0.49981	0.6128
UER does not Granger Cause INF		2.03488	0.1526

LNMS does not Granger Cause UER	29	4.59572	0.0204
UER does not Granger Cause LNMS		0.79885	0.4614
MPR does not Granger Cause INT	29	0.87473	0.4299
INT does not Granger Cause MPR		3.12567	0.0622
FEX does not Granger Cause INT	29	2.48708	0.1043
INT does not Granger Cause FEX		1.07827	0.3561
INF does not Granger Cause INT	29	3.12803	0.0621
INT does not Granger Cause INF		0.90290	0.4187
LNMS does not Granger Cause INT	29	3.84884	0.0355
INT does not Granger Cause LNMS		0.12333	0.8845
FEX does not Granger Cause MPR	29	2.20578	0.1320
MPR does not Granger Cause FEX		0.09549	0.9093
INF does not Granger Cause MPR	29	2.28275	0.1237
MPR does not Granger Cause INF		5.18808	0.0134
LNMS does not Granger Cause MPR	29	3.25185	0.0563
MPR does not Granger Cause LNMS		0.42494	0.6586
INF does not Granger Cause FEX	29	0.90546	0.4177
FEX does not Granger Cause INF		2.30159	0.1218
LNMS does not Granger Cause FEX	29	3.96515	0.0325
FEX does not Granger Cause LNMS		0.16289	0.8506
LNMS does not Granger Cause INF	29	2.69232	0.0881
INF does not Granger Cause LNMS		0.04627	0.9549

The causality test shows no bidirectional causality. However unidirectional causality was seen running from LNMS to UER, LNMS to INT, MPR to INF and LNMS to FEX.

Test of Stability

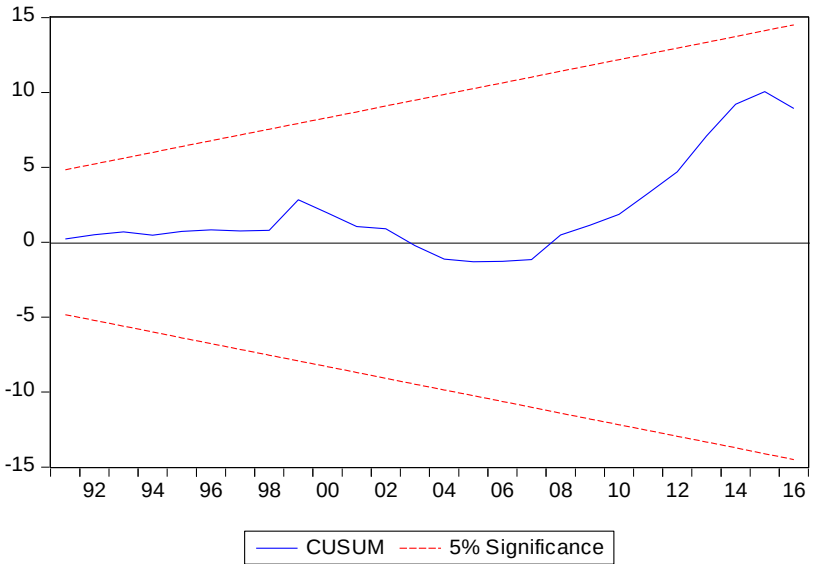


Figure 1: CUSUM Stability Test Result

The stability test enables us to predict the dependent variables in a regression with a reasonable level of precision given the independent variables used in the analysis. The stability test conducted showed that the CUSUM stability test corroborate the stability view with the plot falling within the 5 percent critical acceptance lines, one can generally conclude that the estimated parameters for the study are stable and are useful for policy decision.

Conclusion and Recommendations.

This study examines monetary policy and unemployment linkage in Nigeria using the OLS regression method. The analysis was done with unemployment rate as the dependent variable, and money supply, interest rate, foreign exchange rate, inflation rate and monetary policy rate all independent variables. Findings in the study revealed that money supply, inflation rate and monetary policy rate all exact pressure on unemployment in Nigeria.

Based on findings, the following recommendations are made;

- The monetary authorities should ensure that the monetary policy rate which is a control rate for all other monetary variables shouldn't be high. This will in turn affect the lending rate thereby discouraging investors from borrow to expand investment necessary for employment generation.

- There is a need for stable price level and foreign exchange rate. This is required for steady and continuous growth in investment necessary for the creation of jobs.

References

Ahuja, H.L. (2013). *Modern Economics.* S. Chand Higher Academic, 17th Revised Edition

Ajudua, E. I., Ojima D.& Okonkwo, O.N. (2015). A Review of Monetary Policy and the Nigerian Agricultural Sector Performance. *International Journal of Academic Research in Progressive Education and Development (4)3, 70-86*

Aladejar, S. A., Danjuma, I. J. & Nyputen, I.R. (2017). Does Monetary Policy determine Stock Market Development in Nigeria. *Journal of Economics, Management and Social Sciences, Federal University Wukari, Nigeria*, 3, (1&2) 110-128.

Anyanwu J.C.(1993). *Monetary Economics: Theory Policy and Institution*. Hybrid Publishers Limited Onitsha

CBN (2016). *Statistical Bulletin.* Central Bank of Nigeria.

Damachi, N.A. (2001). Evaluation of Past Policy Measures for Solving Unemployment Problems, in *CBN Bullion, 25 (4).*

Essien, S. N., Manya, G. A., Arigo, M. A. O., Bassey K. J., Ogunyinka, S. F., Ojegwo, D. G. & Ogbuehi, F. (2016). Monetary Policy and Unemployment in Nigeria: Is there a Dynamic Relationship? *CBN Journal of Applied Statistics, 7(1), 209-231*

Fasanya, I.O., Onakoya, A.B.O., & Agboluaje, M.A. (2013). Does Monetary Policy Influence Economic Growth in Nigeria? *Asian Economic and Financial Review, 3(5),635-646.*

Gbosi, A.N. (2005). *Money Monetary Policy and the Economy*; Abigab Associates Ltd Confidence Estate, Uyo Nigeria.

Göçer, I. (2013). Relation between Bank Loans and Unemployment in the European Countries. *European Academic Research, 1(6), 981 – 995.*

Imoughele, L. E. & Ismaila, M. (2014). Empirical Investigation of the Impact of Monetary Policy on Manufacturing Sector performance in Nigeria. *International Journal of Education and Research. 2(1)*

Jhingan, M.L. (1997). *Macro-Economic Theory.* Delhi: Vrinda Publication (P) Ltd.

NBS (2017). *National Bureau of Statistics Bulletin.* Extracted from https://www.nigerianstat.gov,ng

Nwosa, P. I. & Saibu, M.O (2012). The Monetary Transmission Mechanism in Nigeria: A Sectoral Output Analysis. *International Journal of Economics and Finance 4(1).*

Okonkwo O. N., Egbulonu K. G., & Emerenini, F.M. (2015). Monetary Policy and the Manufacturing Sector in Nigeria, *SSRG International Journal of Economics and Management Studies. 2(1), 17.*

Olorunfem, I S. & Dotun, F.O. (2008). Stationarity Analysis of the Impact of Monetary Policy on the Economic Performance in Nigeria, *Pakistan Journal of Social Sciences, 5(6).*

Soludo, C.C. (2008). Issues on the Level of Interest Rates in Nigeria. Extracted from http://www.cenbank.org/OUT/SPEECHES/2008/GOVADD30-6-08.PDF.

Vizek, M. (2006). Econometric Analysis of Monetary Transmission Channels in Croatia. *Privrednakretanjaiekonomskapolitika, 109(16), 28-61.*

World Poverty Clock (2018). https://worldpoverty.io

MONETARY POLICY AND REAL SECTORS IN NIGERIA

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Abstract

This study examined the relative effectiveness of selected monetary policy instruments on the performance of two key real sectors in the Nigerian economy. The paper focused on the period 1981-2016 due to its significance in the history of monetary policy in Nigeria (financial sector liberalization started in the year 1986). Time series data sourced from the Central Bank of Nigeria (CBN) statistical bulletin and the World Development Indicator Database published by the World Bank were used in this study. Agricultural and manufacturing sector output were used as the proxies for real sector performance; while money supply, interest rate, broad money growth rate, and credit to the sectors were the predicting variables. The pre-estimation tests (i.e. unit root and cointegration) shows the time series are a mix of order of integration and a long run relationship was also revealed by the ARDL Bounds cointegration tests conducted on the estimated models. The estimated models revealed that money supply had positive and significant effect on performance of the real sectors in the short run and also expected to have a positive effect on the both sectors in the long run. Interest rate proved to be an insignificant predictor of the performance of the agricultural and manufacturing sector. Broad money growth rate impacted positively and significantly on the output from both sectors in the short run; but negatively in the long run. Credit to the both sectors had positive impact on both sectors in the short run but a negative and significant impact in the long run. The study recommends that money supply should increase to these sectors as flow of bank credits to the sector should also continue to increase. Moreover, a single digit interest rate on loan from the commercial banks to help encourage investment in the agriculture and manufacturing sector in Nigeria.

Keyword: Autoregressive Distributive Lags (ARDL), Bounds Test, Real Sectors, Broad Money Growth Rate, Monetary Policy.

Introduction

The real sector of the economy plays a vital role and also strategic in the entire growth process of a nation. There are a lot of benefits it confers to a nation as it has been confirmed to possess enormous influence on growth and employment generation (Anyanwu, 2010). The contribution of the real sectors to countries' economy have been the yardstick for appraising the effectiveness of macroeconomic policies such as fiscal and monetary policies. Jhingan (2011) sees fiscal policy as a powerful instrument of government actions affecting its pattern of expenditure and revenue, ordinarily the difference between expenditure and revenue is measured by the government's net income, which indicates either a surplus or deficit budget. On the other hand, Gbosi (2016) reported that monetary policy is a measures put in place by monetary authorities or by the central bank to control and checkmate banks and other financial institution. Also it could be seen as a deliberate action of the government put in place to control and strengthen the volume and size of money supply to achieve some specified macroeconomic objectives such as full utilization of resources, stability in price level, desired growth level, and exchange rate balance of payment equilibrium (Gbanador, 2007). Monetary policy is known to be one of the macroeconomic management instruments used by the monetary authority to influence what would be the outcomes in the real economy to its expected direction. The monetary policy objectives are basically geared towards the promotion of stable prices, sustainable output and employment. In the words of Mishkin (1995 and 1996), monetary policy affects the economic progress through monetary instruments such as money supply, interest rate, monetary policy rate, cash reserve requirement, asset prices via exchange rates, equity and housing prices and more.

Statement of Problem

Money supply in a developing or emerging economy has been a controversial issue over the years. The amount of money supply that is permitted to be in circulation in an economy has been a discussion of opposing opinions of the monetary authorities. Excess money causes inflation but when there is a reduction in money supply it causes a rise in interest rate (Yakubu, Umar & Aminu, 2014). There is a presumption that the connection between inflation

and output gap, or in general perspective, excess aggregate demand is as a result of excess money supply.

Interest rate in Nigeria has not been stable over the years. The minimum discount rate (MDR) was initially used as a bench mark for interest rate. It was later change to the monetary policy rate in 2006.The instability of interest rate has made it difficult for investors to borrow funds (Obute, Adyorough and Idoko, 2012). The consideration of economic growth as an objective of monetary policy is the main problem of how changes in monetary instruments affect aggregate output level and hence, the overall performance of the economy specifically, the real sectors.

Conflicting results have been observed from different studies (Ogbuabor & Nwosu, 2017; Adeyefa & Obamuyi, 2018; Kyari, 2015). This served as the motivation for this paper. This study is therefore set out to comparatively examine the relative effectiveness of selected monetary policy instruments on the performance of two key real sectors in Nigeria.

Aim, Objectives & Hypotheses

The aim of this paper is to investigate the relative effectiveness of some selected monetary policy instruments (money supply, broad money growth rate, interest rate, and deposit money bank credits to the selected sectors) on the performance of two key sectors of the economy. Specifically, the study examined the:

i. relative effectiveness of selected monetary policy instruments on the performance of the agricultural sector; and
ii. relative effectiveness of selected monetary policy instruments on the performance of the manufacturing sector.

The following null hypotheses were also tested:

i. H_0: Selected monetary policy instruments had no significant effect on the performance of the agricultural sector.
ii. H_0: Selected monetary policy instruments had no significant effect on the performance of the manufacturing sector.

Theoretical Literature

The Classical Quantity Theory of Money

The classical economists such as Adam Smith (1723), Ricardo (1823), Jean Baptist Say (1832), Piguo (1877) and other notable classical economist explain the relationship between money supply, average price level and the real output. The relationship is positive, meaning the higher the level of money supply, the higher the level of saving and investment demand, and the higher the real output. In the classical theory, Say's law precisely 'supply create its own demand'. In relation to the classical believe, the economy assumed to tends to full employment level since wage is flexible to accommodate the fluctuation in the system. In the classical model, the general price level is being determine by the quantity of money supply. Mathematically, the model is stated as follows:

MV = PQ
Where
M = Money Supply
V = Velocity
P = Average Price Level
Q = Real Output (GDP)
PQ = Nominal GDP

Velocity represents the number of times (per year) money (one unit of currency) is used to purchase goods and services. The classical theory assumes that velocity is constant. Money is used to buy goods and services. An increase in money supply (M) will lead to an increase in the desired level of transactions or real output (i.e. PQ). The classical quantity theory of money is considered fitting since it relates money supply with real output (i.e. output from the real sector). A positive relationship is expected between money supply and output from real sectors.

The Classical Theory of Interest Rate

This theory of interest rate was propounded by Marshall, Pigou, Walras and some other classical economists. This theory as explained by Hansen (1951) stated that interest rate is influenced by total reserve, level of supply and

demand for capital. Time preference determined the level of fund to be supply in the economy while the total demand for capital is influenced by the marginal productivity of capital. Therefore, in this manner, interest rate theory can be regarded as the model of saving for demand and supply. On demand side, the demand for capital is for productivity and consumption purposes. Capital is very crucial for investors because is productive that's why is being demanded for. But the law of variable proportion hinders the capital productivity. This means that capital demand has a negative relationship with interest rate. There are however certain other factors which control the demand for capital, such as the population growth, technical progress, process of rationalization, and living standard of the community. On the other hand, supply of capital relies on savings. Some persons save irrespective of the rate of the interest. They keep saving at the zero rate of interest while others might save when the benefit derived from saving is adequate to cause them to withhold consumption. This could be seen as expansionary monetary policy where the policy is measured by the level of total demand in the system in accordance with supply of money. The classical theory of interest rate explains an indirect relationship between interest rate and real output. A fall in demand for capital due to high interest rate will reduce investment and real GDP. Interest rate is therefore expected to have a negative relationship with output from the real sector. Hence this theory is also adopted for this paper.

Debt-Intermediation Hypothesis

The 'debt-intermediation' hypothesis proposed by Shaw (1973) is based on an inside money model. He argues that high interest rates are essential in attracting more savings. With more supply of credit, financial intermediaries promote investment and raise output growth through borrowing and lending. Also, King & Levine (1993) find that higher levels of financial development are associated with faster economic growth and conclude that finance seems to lead growth. Neusser & Kugler (1998) and Choe & Moosa (1999) reach the same conclusion. This hypothesis is also deemed applicable to this study as it explains the role supply of credit by financial intermediaries (i.e. banks) plays in boosting growth of real output.

Definition of Concepts

Monetary Policy

Monetary policy is defined as the combinations of tools, instrument, and policies formulated to guide the inflow of money in an economy. It can be seen as the act of controlling the behaviour of money to ensure price stability and economic growth in an economy. Shoaib (2010) insists that the monetary authority uses these instruments to direct the kind of supply of money and target the interest rate that will ensure sanity in the system. The main objective is to ensure a good price stability, full employment "balance economic growth" and balance of payment in other to maintain a stable exchange rate and positive interest rate and to promote non-inflationary growth in output. The instrument and techniques to achieve this objective varied over the year. There are two phases instruments of monetary policy, direct era (Pre-sap) and indirect era (Post-Sap) the era of direct money policy instruments tend to place restriction and involved the use of monetary measures, whereas the indirect era depends on price mechanism. Monetary policy relied on intermediate targets to influence the ultimate objective of policy. The minimum rediscount rate (MRR) was the back born rate for monetary policy instruments. Direct and indirect policy regime have the funds from surplus to deficit sectors with the aim of enhancing growth and development.

The Real Sector

This sector is defined in line with those activities that brings about the production of traded and non-traded goods and services (CBN, 2012). In other words, the productive sector is of the sectors of the economy where raw materials and other factors of production are combined together for production of goods and services. The productive sector also processed unfinished goods to finished goods. Basically the real sectors are agricultural, manufacturing (industry) construction, trade and service sectors. In the agricultural sector, the activities compose land cultivation, animals raising and rearing for the benefit of man. Livestock production cropping, fishing, and forestry processing and marketing of these agricultural products is also part of agricultural sector activities. Agriculture involves crop production, livestock, forestry and fishing. It generates the income, food and also create employment

opportunities for individual households and raw material for industrial sector inputs. In the area of government, the exported products from agricultural outputs are used to raise government revenue and reduces the balance of payment disequilibrium. Anyanwu (1997) argued that agriculture transformation in other to support the socio-economic system of the economic cannot be undermined.

Empirical Review

Monetary Policy and Agricultural Sector Performance.

Ehinomen and Charles (2012) examined the effect of monetary policy on agricultural development in Nigeria from 1970 to 2010. Employing the ordinary least squares (OLS) econometric technique, the authors revealed that monetary policy did not record significant progress in terms of providing enabling environment for better performance in the agricultural sector. Musa (2015) analysed the impact of monetary policy on agricultural sector output in Nigeria from 1986 to 2012. The resulting impulse response function and variance decomposition from the estimated vector autoregressive (VAR) model shows that while monetary policy rate did not impact significantly on agricultural sector, lending rate was found to significantly impact on the agricultural sector. Ajudua et al (2015) reviewed the relationship between money supply and the Nigerian agricultural sector performance within 1986 and 2013 by using the ordinary least square (OLS) econometric techniques, the findings from the study therefore showed that there is a connection between money supply and performance of agricultural sector in the economy. Uma, Ogbonna, and Obidike (2014) on the effectiveness of monetary policy transmission mechanism in Nigeria, it was noticed that rate of exchange, loanable funds and rate of interest are the most effectives monetary policy instruments in the economy. Therefore, the researchers suggested that low interest rate should be implemented to encourage investment in agricultural sector productivity. Chandio et al (2015) studied the link between financial institutions credits and performance of the agricultural sector within the period of 1996 and 2015 with the analysis of the ordinary least square method of economic analysis. The results indicated that a 1 percent rise in credit will cause agricultural output to falls by 0.86% which shows that credit to agriculture is positive and significant in the Nigerian economy. Udoka, Mbat

& Duke (2016) used multiple regression OLS model to estimate the effect of bank credit on agricultural sector out in Nigeria for the period 1970-2014. The authors observed that an increase in loans to agriculture sector will increase the contribution of agriculture sector to economic growth in Nigeria and therefore, they recommended that adequate effort should made in other to improve the loanable funds to the agricultural sector. Ogbuabor and Nwosu (2017) estimated an error correction model to examine the output of the agricultural sector with regard to the credits from the deposit money banks in Nigeria between 1981 and 2014. Their study found that credits raised to support agricultural sector turns to increase the level of economic growth through agricultural output. Funding to the agricultural sector should be encourage in other sustained the economy through this sector, this was the policy recommendation from the authors.

Monetary Policy and Manufacturing Sector Performance.

Musa (2015) analysed the impact of monetary policy on the manufacturing sector, M2 was the most important variable that explains variation in its output, followed by lending rate and M1. The most important variable that explains variation in services sector output was Ml, followed by M2, credit to private sector and lending rate. Okonkwo, Egbulonu & Mmaduabuchi (2015) investigated the effect of monetary policy on the manufacturing sector in Nigeria from 1981 to 2012. The estimated error correction (ECM) model revealed that money supply and credit to private sector exert tremendous influence on manufacturing sector in Nigeria. Okoye, Nwakoby & Modebe, (2015) examined the link between the industrial sector performance and interest rate liberalization in the Nigerian economy with the help of vector error correction model as an analytical technique. The findings showed that exchange rate volatility has an insignificant positive impact on industrial output performance. There was equally a significant positive impact of lending rate and financial depth on industrial output growth, that means that interest rate liberalization made impact on industrial sector. Olarewaju, et al (2015) investigated the manufacturing sector performance due to banking sector reform between 1970 and 2011 in Nigerian economy using the co-integration an error correction model. The researchers revealed through their results that manufacturing sector is really influenced by the action of the monetary

authority through real interest rate, exchange rate bank credit. Kalu (2017) assessed the relative performance of the manufacturing sector regarding to the credit obtains from the financial institution credit in Nigerian. This assessment was done with the help of the Autoregressive Distributed Lag (ARDL) bound (Co-integration) test approach and error correction method. They found out that in the short run relationship, that the independent variable influenced the volume of the credit from money deposit bank at five percent. Both interest and exchange rate and its lags in the long run affects manufacturing sector negatively with five percent level of significant. Increase in the volume of bank credit was recommended by the study. Nnamocha & Eke (2015) investigated Bank credit and Agricultural Output in Nigeria between 1970 and 2013 using an error correction model Approach. This study found out that credit from deposit money bank and industrial output influence the performance of agricultural sector in the long-run but in the short-run industrial output influence agricultural output. The study recommended that the government through its relevant authorities should design a favorable policy that will enable banks to make credit more available to the agricultural sector as this will lead to development and create jobs for the youths. Oluwafemi et al (2014) examined the link between bank and real sectors (agriculture and manufacturing) productivity using the error correction modeling techniques. The result from this study showed that in both the short run and long-run bank credit have significant impact on manufacturing output while inflation and exchange rate have negative impact on manufacturing output in both short run and long run. The study recommended that policies that will enhance manufacturing output growth should be put in place.

Gap in Literature

The empirical reviewed showed that some studies (e.g. Okoye et al, 2015) only examined impact of just one monetary policy instruments (e.g. interest rate) on agricultural sector performance. This study considers this as a gap that needs to be filled. Hence, a combination of different monetary policy instruments for the purpose of comparative analysis was done in this paper. and real sector performance. Moreover, Oluwafemi et al (2014) only focused on investment without including cost of investment (i.e. interest rate) as determinants of manufacturing sector performance in Nigeria. This study also

considers this a gap and included interest rate as determinant of manufacturing sector performance in Nigeria. Lastly, volume of money in supply at a particular period of time was the most frequently used monetary policy instrument. But this study considers this inadequate and a gap. Hence, the growth rate in money supply was considered more appropriate as it shows rate of increase in percentage terms. Hence this study also fills this gap by including broad money growth rate as a key variable in the model.

Research Method

Research Design

The study is a major a predictive study; hence it employed quasi-experimental research design. It is best suitable when variables that cannot be controlled in a laboratory are to be used. Hence, the best experimental is quasi experimental design.

Data Required and Sources

The study employed secondary data that were collected from Statistical Bulletin of the Central Bank of Nigeria and the World Banks covering the period 1981 to 2016. From these sources, annual time series on agricultural sector output, manufacturing sector output, interest rates, money supply, bank credit to agricultural and manufacturing sector, and broad money growth rate.

Model Specification

The models estimated are premised on the work of Kyari (2015) who specified and estimated the model represented by equation 3.1. The model was modified to reflect the focus of this study. While Kyari (2015) used income as a proxy for measuring real sector, this study opted for contribution of the agriculture and manufacturing sector to real output as proxies for measuring real sector performance.

LNINV = f (IR, MS, EXR, MRR, TB) 3.1
AGRIC = f (MS, INR, CREDAGR, BROADMGR) 3.2
MANUF = f (MS, INR, CREDMANF, BROADMGR, MIMPT) 3.2

Where;
AGRIC = Agricultural Sector Output
MANUF = Manufacturing Sector Output
INR = Interest Rate movement
MSS = Money Supply
CREDAGR = Bank Credits to Agricultural Sector
CREDMANF = Bank Credits to the manufacturing sector
MIMPT = Merchandise Import
BROADMGR= Broad money growth rate

Estimation Techniques and Procedures

Pre-estimation Tests

- Unit Root Test: The unit root process is concern with stationarity of the time series employed in the models. We limited our test of stationary to the unit root approach and adopted the model augmented by Dickey & Fuller (1979).

- Cointegration Tests: The ARDL or bound testing cointegrating techniques was adopted. We limited our test to the bound testing cointegrating techniques because or series are of different order of integration. Thus the Pesaran, Smith & Shin model of 2001 was used.

Model Estimation

Model I: Agricultural Sector Output ARDL Model Estimation

$$AGRRIC = \alpha_0 + \beta_t + \beta_1 \log MSS + \beta_1 \log MSS_{t-1} + ... + \beta_1 \log MSS_{t-n} + \beta_2 INR + \beta_2 INR_{t-1} + ... + \beta_2 INR_{t-n} + \beta_3 \log CREDAGR + \beta_3 CREDAGR_{t-1} + ... + \beta_3 CREDAGR_{t-n} + \beta_4 BROADMGR + \beta_4 BROADMGR_{t-1} + ... + \beta_1 BROADMGR_{t-n} + \varepsilon_t \quad 3.3$$

Model II: Manufacturing Sector Output ARDL Model Estimation

$$MANUF = \alpha_0 + \beta_t + \beta_1 \log MSS + \beta_1 \log MSS_{t-1} + ... + \beta_1 \log MSS_{t-n} + \beta_2 INR + \beta_2 INR_{t-1} + ... + \beta_2 INR_{t-n} + \beta_3 \log CREDMANUF + \beta_3 CREDMANUF_{t-1} + ... + \beta_3 CREDMANUF_{t-n} + \beta_4 BROADMGR + \beta_4 BROADMGR_{t-1} + ... + \beta_2 BROADMGR_{t-n} + \beta_4 MIMPT + \beta_4 MIMPT_{t-1} + ... + \beta_2 MIMPT_{t-n} + \varepsilon_t \quad 3.4$$

Here, n is the number of years for lag, ε_t is the disturbance terms and βi's are coefficient for short run and αi's are coefficients for long run relationship.

Post-Estimation Tests

Three post-estimation tests were conducted on the estimated models. They are:

i. **Serial Correlation Test**: Serial correlation is evident when error terms in a time series transfer from one period to another (i.e. error for one-time period *a* is correlated with the error for a subsequent time period *b*). Serial correlation leads to an inefficient ordinary least squares estimates and any forecast based on those estimates.

ii. **Heteroscedasticity Test**: The concept of heteroscedasticity - the opposite being homoscedasticity - is used to describe the case where the variance of errors or the model is not the same for all observations, while often one of the basic assumption in modeling is that the variances are homogeneous and that the errors of the model are identically distributed. In linear regression analysis, the fact that the errors of the model (also named residuals) are not homoscedastic has the consequence that the model coefficients estimated using ordinary least squares (OLS) are neither unbiased nor those with minimum variance. The estimation of their variance is not reliable. So the test is conducted to ensure that the estimates of the model are unbiased.

iii. **Ramsey RESET Test**: this test is a general test used to detect functional form misspecification. This test is designed to detect if there are any neglected nonlinearities in the model. Any evidence of neglected nonlinearities in the models estimated will imply misspecification and estimates unreliable.

Results and Discussion

Pre-estimation Tests

Unit Roots Tests

Table 4.1 below shows the Augmented Dickey-Fuller (ADF) unit root test results for all the time series used in this study. The test for each time series was conducted based with reference to the properties (i.e. intercept, trend, or even both). The result shows that while some time series were stationary at levels, the others only became stationary after first differencing. Hence, we have a mixed order of integration [i.e. I(0) and I(1)]. In a situation like this, Pesaran *et al.*, (2001) provided a test method for testing cointegrating relationship among variables in a single equation model, if the series in the model have different order of integration. The ARDL bounds cointegration test was recommended (Pesaran *et al*, 2001). Hence, the cointegration test results is presented and discussed in section 4.1.2.

Table 4.1 Unit Root Test Results for all Time Series (Levels & 1st Difference)

Time Series	Levels ADF Test Results	1st Diff. ADF Test Results	5% Critical Values
LOG(AGRIC)	0.23	5.72*	2.95
LOG(MANUF)	0.33	4.77*	2.95
LOG(MSS)	1.12	3.30*	2.96
INR	3.06*	-	2.95
BROADMGR	3.62*	-	2.95
LOG(CREDAGR)	1.02	6.84*	2.95
LOG(CREDMANF)	0.64	5.52*	2.95
LOG(IMPT)	0.70	4.76*	2.95

Source: Authors' Computation

Note: * signifies stationarity and the statistics are all in absolute term.

Cointegration Test

The ARDL Bounds cointegration test results presented in Table 4.2 shows that the computed f-statistics from the cointegration tests were all greater than the 5% critical higher bound (i.e. 4.73 > 4.01 and 4.76 > 3.37). With this result, we can decide that a long relationship exists between the time series in the agriculture and manufacturing sector performance models. The short run dynamics and long run ARDL model becomes the most appropriate models to be estimated.

Table 4.2: Co-integration Test Result for Specified Models

Models	Computed F-Statistics	5% Critical Lower [I(0)] Bound	5% Critical Higher [I(1)] Bound	Decision
Agriculture Sector Performance	4.73	2.86	4.01	Long run exists
Manufacturing Sector Performance	4.76	2.62	3.37	Long run exists

Source: Authors' Computation

Model Estimation

The ARDL short and long run behaviors of the explanatory variables are reported respectively in the upper and lower panels of Table 4.3. Schwarz information criterion (SIC) was used as autoregressive order selection criteria. Schwarz (1978) derived an information criterion, known as Schwarz information criterion (SIC).SIC is also called Schwarz-Rissanen criterion as Rissanen (1978) also arrived at the same criterion independently, using different methodology. However, SIC has the advantage of being consistent over AIC (Basci and Zaman, 1998). The result presented in panel A and B is discussed thus:

From the result, money supply had positive and significant impact on both the agricultural and manufacturing sectors. But it was observed that the period required for significant positive impact varied. While at least a three lag of

money supplied impacted significantly on agricultural sector output, money supply instantly impacted significantly on the manufacturing sector output. Moreover, the magnitude of the impact of money supply on agricultural sector was greater than its impact on the manufacturing sector. Secondly, interest rate failed to significantly impact on both of the sectors. Thirdly, while broad money growth rate had mixed (positive and negative) impact on manufacturing sector, its impact on the agricultural sector was positive and significant at different lags (i.e. one and three periods lags). Credit to both sectors also positively and significantly impacted on the both sectors at different lags. While it impacted positively and significantly on the manufacturing sector at one period lag, it impacted significantly on the agricultural sector at three period lag. It was also observed that the error correction terms appeared with the expected negative sign and are statistically significant.

Table 4.3: Autoregressive Distributive Lag (ARDL) Models

Panel A: Short-Run Dynamics		
Predictors	Agricultural Sector Model [Coefficient]	Manufacturing Sector Model [Coefficient]
DLOG(MSS)	[0.3578]	[0.3444]**
DLOG(MSS(-1))	[0.0654]	-
DLOG(MSS(-2))	[-0.0167]	-
DLOG(MSS(-3))	[0.9302]***	-
D(INR)	[0.0053]	[0.0025]
D(INR(-1))	-	[0.0006]
D(INR(-2))	-	[0.0042]
D(BROADMGR)	[0.0004]	[-0.0003]***
D(BROADMGR(-1))	[0.0083]**	[0.0024]**
D(BROADMGR(-2))	[0.0047]	[0.0026]***
D(BROADMGR(-3))	[0.0045]**	-
DLOG(CREDMANF)	-	[-0.0701]
DLOG(CREDMANF (-1))	-	[0.2833]**
DLOG(CREDMANF(-2))	-	[0.1656]
DLOG(CREDAGR)	[-0.0573]	-
DLOG(CREDAGR(-1))	[0.0717]	-
DLOG(CREDAGR(-2))	[0.0438]	-
DLOG(CREDAGR(-3))	[0.1811]**	-
DLOG(MIMPT)		[0.1329]***
Cointeg(-1)	[-0.6272]***	[-0.6300]***
Panel B: Long Run		
LOG(MSS)	[0.7055]***	[1.069]***
INR	[0.0085]	[0.0051]
BROADMGR	[-0.0406]**	[-0.0176]***
LOG(CREDAGR)	[-0.5405]***	-
LOG(CREDMANF)	-	[-1.0425]***
LOG(MIMPT)	-	[0.2110]***
C	[5.5667]***	[5.0084]***

Source: Author's Computation

NB: *, **, *** signifies 10%, 5%, and 1% significance level.

Money supply is expected to positive and significantly impact on both sectors in the long run. Again, interest rate is not expected to significantly have any effect on both sectors in the long run. Broad money growth rate is expected to have negative and significant impact on the both sectors. Lastly, credit to both sectors are expected to have negative and significant impact on output from both sectors.

Post Estimation Tests

Table 4.4 Diagnostic Test Results

Diagnostic Tests	Agricultural	Manufacturing	Decision
Normality Test	3.81	1.40	Normally Distributed
Serial Correlation	0.11	0.50	No Serial Correlation
Heteroscedasticity	0.62	1.36	Homoscedasticity
Ramsey Reset	0.36	0.42	Correctly Specified

Source: Author's Computation

The post-estimation tests results are presented in Table 4.4 above. The normality tests for both model shows that the null cannot be rejected, hence well conclude that the residuals are normally distributed around its mean. The Breusch-Godfrey LM test result reveals the failure of rejecting the null hypothesis; thus, the residuals are not serially dependent. The Breusch-Pagan-Godfrey Test shows that we cannot be reject the null hypothesis; hence we conclude that the residuals are not heteroscedastic. That is the variance of the residual are constant Lastly, the Ramsey Reset test result shows that the null hypothesis cannot be rejected; hence, the model is correctly specified.

Conclusion and Recommendations

On the premise of our analysis, money supply was found to have positive and significant impact on the manufacturing sector output in Nigeria in both the short and long run. This shows that money supply as a monetary policy measure has been a very important monetary policy instruments in the performance of the both sectors. Interest rate is not a significant predictor of the performance of the agricultural and manufacturing sector. Broad money growth rate impacted positively and significantly on the output from both sectors in the short run; but negatively in the long run. Credit to the both sectors had positive impact on both sectors in the short run but a negative and

significant impact in the long run. The study recommends that money supply should increase to these sectors as flow of bank credits to the sector should also continue to increase. Moreover, a single digit interest rate on loan from the commercial banks to help encourage investment in the agriculture and manufacturing sector in Nigeria.

References

Adeyefa, F.A., & Obamuyi, T.M. (2018). Financial Deepening and the Performance of Manufacturing Firms in Nigeria. *Canadian Social Science*, 14(6), 87-96.

Ajudua, E. I., Davis, O. J.P., & Okonkwo, O. N. (2015). A Review of Monetary Policy and the Nigerian Agricultural Sector Performance. *International Journal of Academic Research in Progressive Education and Development*, 4(3), pp.70-86.

Anyanwu, J.C. (1997). *The Structure of the Nigerian Economy (1960-1997).* Onitsha, Nigeria: Joanee Educational Publishers.

Anyanwu, C. M. (2010). An Overview of Current Banking Sector Reforms and the Real Sector of the Nigerian Economy. *Central Bank of Nigeria Economic and Financial Review*, 48(4), pp.31- 56.

Basci, S. and Zaman, A. (1998). Effects of Skewness and Kurtosis on Model Selection Criteria. *Economic Letters*, 59, 17–22.

Central Bank of Nigeria (2012). *Annual Report and Statement of Accounts*. Abuja.

Chandio, A.A., Jiang Y. & Koondher, M.A. (2015). Raising Maize Productivity through Agricultural Credit A: Case Study of Commercial Banks in Pakistan. *Eur. J. Bus. Management*, 7(32), pp.159-165.

Choe, C. and Moosa, I. (1999). Financial System and Economic Growth: The Korean Experience. *World Development*, 27, pp. 1069-1082.

Dickey, D. A., & Fuller, W.A. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root. *Journal of the American Statistical Association*, 74(366),427-431.

Ehinomen, C., & Charles, A.C. (2012). The Impact of Monetary Policy on Agricultural Development in Nigeria (1970-2010). *IOSR Journal of Humanities and Social Science (JHSS)*, 5(5), pp.13-25.

Gbanador C. A. (2007). *Modern Macroeconomics*. Port Harcourt: Pear Publishers.

Gbosi, A. N. (2016). *Monetary Economics and Financial Markets.* Port Harcourt: Abigab Association Ltd.

Hansen, A.H. (1951). *Business Cycles and National Income*. London: Allen and Unwin.

Jhingan, M.L. (2011). *Monetary Economics*. New Delhi: Vrinda publication Ltd.

Kalu, E. O. (2017). How Does Monetary Policy and Private Sector Credit interact in a Developing Economy? *Intellectual Economics*, 10, pp.92-100.

King, R. G. and Levine, R. (1993). Finance and Growth: Schumpeter Might Be Right. *Quarterly Journal of Economics*, 108, pp. 717-737.

Kyari, G.V. (2015). An Evaluation of the Impact of Monetary Policy on the Real Sector in Nigeria. *Mediterranean Journal of Social Sciences*, 6(2), 361-369.

Mishkin, F. S. (1995). Symposium on the Monetary Transmission Mechanism. *Journal of Economic Perspectives*, 9, pp.3-10.

Mishkin, F. S. (1996). The Channels of Monetary Transmission: Lessons for Monetary Policy. *National Bureau of Economic Research Working Paper*, No. 5464.

Musa, Y. (2015). *Analysis of the Impact of Monetary Policy on Agricultural, Manufacturing and Services sectors Output in Nigeria (1986-2012).* An unpublished M.Sc Thesis Submitted to the School of Post Graduate Studies, Ahmadu Bello University, Zaria.

Neusser, K. and Kugler, M. (1998). Manufacturing Growth and Financial Development: Evidence from OECD Countries. *Review of Economics and Statistics*, 80, 638-646.

Nnamocha, P.N. & Eke, C.N. (2015). Bank Credit and Agricultural Output in Nigeria (1970 – 2013): An Error Correction Model (ECM) Approach. *British Journal of Economics,* Management & Trade, 10(2), pp.1-12.

Obute, C., Adyorough, A., & Itodo, A.I. (2012). An Assessment of the Impact of Interest Rate Deregulation on Economic Growth in Nigeria. *Journal of Business and Organizational Development*,4, pp.39-57.

Ogbuabor, J.E. & Nwosu, C.A. (2017). The Impact of Deposit Money Bank's Agricultural Credit on Agricultural Productivity in Nigeria: Evidence from an Error Correction Model. *International Journal of Economics and Financial Issues*, 7(2), pp.513-517.

Okonkwo, O.N., Egbulonu, K. G., & Mmaduabuchi, E. F. (2015). Monetary Policy and the Manufacturing Sector in Nigeria. *International Journal of Economics and Management Studies*, 2(1), pp.17-25.

Okoye, L.U., Nwakoby, C.I., & Modebe, N.J. (2015). Interest rate reform and Real Sector Performance. *African Banking and Finance Review*, 2(1), pp.97-114.

Olanrewaju, O. G., Aremo, A. G., & Aiyegbusi, O.O. (2015). Banking Sector Reforms and Output Growth of Manufacturing Sector in Nigeria. *Journal of Economics and International Finance*, 7(8), pp.183-191.

Olorunfemi, S., Tomola, M. O., Adekunjo, F. O., & Ogunleye, E. O. (2013). Manufacturing Performance in Nigeria: Implication for Sustainable Development. *Asian Economic and Financial Review*, 3(9), 1195-1213.

Pesaran, M. H., Shin, Y. & Smith, R. J. (2001). Bounds Testing Approaches to the Analysis of Level Relationship. *Journal of Applied Econometrics*, 16(3),289–326.

Rissanen, J. (1978). Modelling by Shortest Data Description. *Automatica*, 14, 467–471.

Schwarz, G. (1978). Estimating the Dimension of a Model. *The Annals of Statistics*, 6, 461–464.

Shaw, E. S. (1973). *Financial Deepening in Economic Development*. London and New York: Oxford University Press.

Udoka, C. O., Mbat, D. O. & Duke, S. B. (2016). The Effect of Commercial Banks' Credit on Agricultural Production in Nigeria. *Journal of Finance and Accounting*, 4(1), pp.1-10.

Uma, K. E., Ogbonna, B. M., & Obidike, P. (2014). *Monetary Policy Transmission Mechanism in Nigeria: An overview*. 12th International Academic Conference, Prague, pp.1317-1333.

Yakubu, M., Umar, U. & Zoramawa, A.B. (2014). Relationship between Money Supply and Government Revenues in Nigeria. *CBN Journal of Applied Statistics*, 5(2), pp.117-136.

APPENDIX

YEAR	MSS	INR	CRED SGR	AGRIC	BROA DGRT	NIMPT	CRED MANUF	MANUF
1981	14.47	7.75	0.6	2364.37	5.9	20.88	2.7	1558.7
1982	15.79	10.25	0.8	2425.96	9.55	16.06	3	1764.89
1983	17.69	10	0.9	2409.08	14.02	12.25	3.1	1167.89
1984	20.11	12.5	1.1	2303.51	11.6	9.36	3.1	1018.91
1985	22.3	9.25	1.3	2731.06	8.99	8.88	3.2	1416.79
1986	23.81	10.5	1.8	2986.84	1.95	4.03	4.5	1373.66
1987	27.57	17.5	2.4	2891.67	22.41	3.91	5	1398.1
1988	38.36	16.5	3.1	3174.57	32.91	4.72	6.1	1618.25
1989	45.9	26.8	3.5	3325.95	12.93	4.19	6.7	1665.09
1990	52.86	25.5	4.2	3464.72	32.7	5.63	7.9	1670.73
1991	75.4	20.01	5	3590.84	37.38	8.99	10.9	1829.34
1992	111.11	29.8	7	3674.79	63.26	8.28	15.4	1758.61
1993	165.34	18.32	10.8	3743.67	53.76	7.51	23.1	1706.7
1994	230.29	21	17.8	3839.68	34.5	6.61	34.8	1670.72
1995	289.09	20.18	25.3	3977.38	19.41	8.22	58.1	1592.49
1996	345.85	19.74	33.3	4133.55	16.18	6.44	72.2	1599.94
1997	413.28	13.54	27.9	4305.68	16.04	9.5	82.8	1609.83
1998	488.15	18.29	27.2	4475.24	22.32	9.21	96.7	1412.44
1999	628.95	21.32	31	4703.64	33.12	8.59	115.8	1459.02
2000	878.46	17.98	41	4840.97	48.07	8.72	141.3	1505.66
2001	1269.32	18.29	55.8	5024.54	26.38	11.59	206.9	1666.49
2002	1505.96	24.85	59.8	7817.08	18.82	7.55	233.5	1813.81
2003	1952.92	20.71	62.1	8364.83	13.51	10.85	294.3	1918.09
2004	2131.82	19.18	67.7	8888.57	20.68	14.16	332.1	2143.45
2005	2637.91	17.95	48.6	9516.99	22.6	20.75	352	2350.99
2006	3797.91	17.26	49.4	10222.47	36.35	26.52	445.8	2574.29
2007	5127.4	16.94	149.6	10958.47	64.92	34.83	487.6	2823.53
2008	8008.2	15.14	106.4	11645.37	58.53	49.95	932.8	3079.04
2009	9411.11	18.99	135.7	12330.33	17.21	33.91	993.5	3323.41
2010	11034.94	17.59	128.4	13048.89	6.79	44.24	987.6	3578.64
2011	12172.49	16.02	255.2	13429.38	12.99	56	1,053.20	4216.19
2012	13895.39	16.79	316.4	14329.71	20.6	51	1,068.30	4783.66

2013	15160.29	16.72	343.7	14750.52	9.66	56	1,179.70	5826.36
2014	17679.29	16.55	478.9	15380.39	4.44	60	1,647.50	6684.22
2015	18901.3	16.85	449.3	15952.22	3	48	1,736.20	6586.62
2016	21607.68	16.87	525.9	16607.34	11.55	39	2,215.70	6302.23

Source: CBN Statistical Bulletin and World Development Indicators published by World Bank.

PERFORMANCE OF HOSPITALS IN CROSS RIVER STATE, NIGERIA: A COMPARATIVE ANALYSIS OF RURAL AND URBAN PUBLIC SECONDARY CARE INSTITUTIONS USING PRODUCTIVITY INDICATORS

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Abstract

This study analysed the performance of secondary care hospitals in Cross River State using simple productivity ratios with data for the period 2010-2014. Three categories of simple productivity ratios with a total of five indicators were analysed. The study analysed labour productivity using number of admissions per employee and number of admissions per nurse; capital productivity using number of admissions per bed; and structural quality indicators using number of nurses per bed and number of doctors per bed. There were productivity improvements for nine hospitals in admissions per bed and ten for admissions per nurse while productivity was static or declined in three and one hospital respectively for these labour productivity indicators. Nine hospitals witnessed capital productivity improvements while five had improvements in hospital quality. Rural hospitals were more labour productive while urban hospitals were more capital productive showing a relatively higher improvement in quality. The relative low productivity of labour in urban hospitals, with more employees, points to some level of labour redundancy in these hospitals which may result in wastage of resources spent on human personnel without a commensurate input in terms of man hours. Capital provision in rural hospitals, labour and hospital quality productivity improving measures such as remuneration for hours of work done and specialized staff/nursing training could enhance productivity of public secondary care hospitals in the state.

Keywords*: Productivity ratio,* Hospital performance, Inputs and Outputs.

Jel Classification: D24, I12, I11, J21, H51

Introduction

The goals of health systems the world over can be assessed viz-a-viz the ability to improve the population health, meet health expectations of the majority of the people it serves and apply financial and materials resources meant for the sector in a fair and equitable manner. The first two goals have been traditionally examined using measures such as life expectancy and total mortality while the third goal can be measured by the level of productivity and efficiency in resources usage within the health care system.

The concept of productivity is a measure of effectiveness in the use of economic resources and has become increasingly useful as organisations aim at minimizing resource wastage and maximizing outputs. Productivity improvement is critical for improvement in population health and meeting health expectations. This is even more needful given the sectors' growth profile as the health sector constitutes about one-tenth of activities in modern economic systems (Evan et al 2010).

Within the health care system, hospitals are the major players with a large share of health care resources expended by it. Hospitals are the key functional units of the health sub-sector of the economy and a major consumer of both human and financial resources meant for this sector in both developing and developed economies. In the eighties and early nineties in developed countries, the sector alone accounted for 58 percent of gross health expenditure in the United Kingdom, 49.5 percent in United States and 58.7 percent for the Netherlands. In Nigeria, it is estimated that the hospital system consumes over 60 percent of human and materials resources meant for the health care system. (Nwosu, 2000)

Even though hospitals are the major consumers of healthcare resources, there is little evidence to show in terms of delivering on their core mandate of improving life due to poor health indices including high mortality rates in Nigeria. Statistics show that the rating of Nigerian health sector performance and by extension that in Cross River State, are currently worse than the average for sub-Saharan Africa. For instance the World Health Organisation (WHO) ranking of the health system placed the country at the 187^{th} position out of 190 countries in the year 2000. The country's under-five mortality rate

is put at 201 per 1,000 live births (NDHS, 2004), maternal mortality ratio of 800 per 100,000 live births (WHO, 2004), malaria prevalence of 919 per 100,000 population (WHO, 2002) and HIV/AIDS adult prevalence rate of five percent and an estimated 3.5 million new infections yearly (NDHS, 2008). According to the United Nations International Children Emergency Fund (UNICEF, 2009), life expectancy at birth declined to 44 years which is lower than the African average of 46 years and below the average of that of least developed countries which is 53 years.

The situation in Cross River State is not better in any way. For example, estimate puts the infant Mortality Rate in the state at 75 per 1000 live-births compared with the national average of 69 per 1000 live-births and the under-five mortality rate at over 157 per 1000 live-births compared with the national average of 128 per 1000 live-births. The average Maternal Mortality Rate (MMR) for Nigeria is 576 per 100,000 live births as at 2013 while for Cross River State it is between 545 maternal deaths per 100,000 live births; the highest in the South-South geopolitical zone at the time (HERFON, 2006; CR-SEEDS-2,). The percentage of women attending ante natal is about fifty five percent and only about 35% of pregnant women are attended to at birth by skilled attendants.

Table 1: Summary of demographic, socioeconomic and health indicators in Cross River State

Indicator	**Year**	**Estimate**	**Source**
Total population	2006	2.89million	SPC
Annual population growth rate		4.03%	SPC
Life expectancy at birth	2006	55 years	SPC
Adult literacy:	2006	61.7%	NPC
Male		60.7%	
Female		39.3%	
Total Fertility rate (per woman)	2008	5.4%	NPC
Women attending ante natal care	2010	55%	TCF
Birth attended by skilled health worker	2010	35%	TCF

Full immunization by 1 year old	2010	74%	TCF
HIV prevalence	2010	7.1%	FMoH
Maternal mortality ration (per 100,000 live births)	2010	545	TCF
Infant mortality rate (per 1,000 live births)	2010	75	TCF
Under five mortality rate (per 1,000 live births)	2010	157	TCF

Source: SPC-State Planning Commission, NPC-National Population Commission, TCF-Tulsi Chanrai Foundatiuon, FMoH-Federal Ministry of Health.

According to the 2009 Nigeria health systems report, Cross River State when compared with other states in the South-South geopolitical region lags behind in terms of human resources for health and per capita government health expenditure. The dismal performance in the health sector is linked not only to the poor human resources for health and dwindling budgetary allocation for the health sector, but also to poor performance and low productivity of these resources.

The performance of hospitals may vary due to the effectiveness of management, differences in the quality of services rendered, the degree of funding and the operational environment of the hospital (Pierce, 2001). Previous studies that evaluated the performance of hospitals have been undertaken mainly outside the sub-saharan Africa region and the results have been mixed. For instance, while Chansky, Garner and Raichoudhary (2015) and Gu and Li (2015) found improvement in hospital performance over the period of investigation, Sharpe, Bradley and Messinger (2007) as well as Fisher (2007) posited that performance of hospitals actually declined. In the light of the inconclusive results obtained by these studies, this study uses simple productivity ratios to measure the partial factor productivity of public secondary care hospitals in Cross River State comparing rural and urban hospitals. Human resources and capital productivity of these hospitals were examined. Specifically the study has the following objectives:

1. to estimate the productivity indices of public secondary care hospitals in Cross River State, analyzing their differences in terms of location (rural and urban) and
2. to analyse the trend in the productivity of these hospitals over a five year period (2010-2014) for productivity change.

The remainder of the paper is organized thus; section two is the empirical and theoretical review, section three is the methodology while sections four and five are results and discussion and conclusion and recommendations respectively.

Theoretical Issues

Production Theory

Production theory or function in contemporary Economic literature traces the link or relationship between inputs and final output. The process of transforming inputs to outputs (finished goods and services) may take place in various sectors such as manufacturing, transportation, education, banking and healthcare.

Basically, it estimates the relation between output, Y, and other input factors used mostly labour (L), materials (M) and capital (C) (Ludwig, 2008). This relationship can be represented mathematically thus; $Y = f (L, M, C)$
Where : Y = Output, L = Labour, M = Materials, C = Capital
Firms or Decision Making Units (DMUs) produce outputs by combining factor inputs which are known traditionally as factors of production.

The concept of productivity is used as a benchmark for assessing the performance of production units. Thus, ensuring rising productivity is synonymous with profitability increase, costs reduction and increased competitiveness within the production unit's sector. Productivity, which is described as the ratio of outputs to inputs, can be analysed at various levels – economy-wide, industry, firm/agency and operational unit, with the results applied for decisions and policy at these levels.

Productivity indicators

There are two broad classes of productivity indicators: partial productivity indicators and total factor productivity indices. A partial productivity indicator measures an organizations' output in relation to a single input factor. Simple indicators are also known as "performance ratios" and are defined as the ratio of final output produced to a single input factor utilized in the production process. Labor productivity index, for example, can be defined as the number of admitted patients in a hospital for every hospital employee. Productivity indicators can also be derived for given units, departments or segments of the production process, for intermediate outputs and inputs or between inputs and the final outputs. The number of medical files treated for every administrative worker, for instance, can be considered as a partial productivity measure. The advantage of partial indicators is that they are easy to construct and understand and are useful for making adjustments in input usage and re-aligning output to desired production objective

Empirical literature

Empirical studies on performance of decision making units such as the hospital have tend to focus on a particular input measure such as labour or evaluated multifactor productivity growth (MFP) over time. For instance Sharpe, Bradley and Messinger (2007) examined the labour productivity of hospital in Canada for the period 1987-2006 with the result revealing labour productivity decline of -0.69% over the period of investigation. In a related study, Chansky, Garner and Raichoudhary (2015) evaluated the labour productivity of hospitals in USA for the eriod 1993 and 2012 and found productivity improvement of 1.5% over the period for this class of health care institutions. In a study with focus on particular health service provider i.e nursing homes, Gu and Li (2015) while examining labour productivity in Canada, found that there was improvement in productivity by 0.2% for the period 1984-2009. In addition to evaluating the productivity of a particular input, some studies also evaluated multiple factors. Some of such studies in which results revealed productivity improvements include Nghiem, Coelli and Barber (2011) and Spitalnic, Heffler, Dickensheets and Knight (2016), while studies by Fisher (2007) and Harper, Khandrika, Kinoshita and Rosenthal (2010) found productivity decrease. In a study which compared the productivity (efficiency) of rural and urban hospitalsin the United States,

Toodi, Featherstone and Young (1998) found a marginally higher efficiency for urban hospitals (0.72%) than rural hospitals (0.71%). Researchers in sub-saharan Africa may have been averse to analyzing the performance of hospitals given the relatively scanty literature in this field in the continent and the few studies outside the continent have tended to concentrate on labour and capital productivity. Not much have been investigated in the literature related to structural quality indicators which are key to policy formulation. This study therefore fills this gap by analyzing the performance of hospitals within the sub-saharan Africa context and in a way relevant for policy formulation as it examines the structural quality indicator. The study also makes a comparison between rural and urban hospitals to find out if spatial differences could be a factor which affects the performance of hospitals.

Measuring hospital performance

There are various ways of measuring the performance of a hospital. While some researchers make use of ratios, others use certain hospital indices. For instance Maruotti (2007) used measures such as average length of stay, discharge rates and inpatient beds. Using these measures makes it easy for the performance of groups of hospitals with similar characteristics to be compared. Thus a hospital with a shorter average length of stay and a particular output may be considered more productive than one with a longer average length of stay.

The use of simple ratios is another way of measuring performance. According to Zere Asbu (2001), ratio analysis has to do with the examination of various key ratios in a gradual and differentiated manner for a group of hospitals with comparable characteristics in order to find deviations from the norm. Simple ratios are also known as performance or productivity-type indicators and in most cases simple indicators do not require quantitative analysis using multivariate stochastic or deterministic methods. Filippini and Farsi (2004) classified productivity indicators into two main groups; partial productivity measures and total factor productivity indices. Partial productivity indicators measure the relationship between a hospital output to a single input factor e.g labour productivity relates the number of patients treated for every hospital employee and number of case files treated per administrative worker. Total factor productivity (TFP) on the other hand, is the ratio of the index of total

output quantity measure to the index of the total input quantity. TFP are relative measures which can be used between two hospitals or one hospital in two different years. Examples of index numbers include Tornquist index, Fisher index and Malmquist index.

The quality of labor force is assessed by either the percentage of certified physicians or proportion of qualified and teaching nurses; or the number of physicians per bed and number of nursing staff per bed

Types of Simple indicators of hospital

Filippini and Farsi (2004), defined the simple indicators of hospital performance in four categories namely productivity, output characteristics, cost structure and other hospital characteristics. The productivity indicators are divided into two groups which represent the partial productivity of labor and capital. This type of indicator depends on the number of cases or the number of patient-days. The major shortcoming of Capital productivity indicators which is usually uses number of beds as proxy is that this measure merely approximates capital stock.

The second category includes certain characteristics of inputs/outputs which do not give direct measures of productivity but are however essential for effective hospital performance. These indicators are relevant for policy formulation and managerial performance analysis. The input indicators measure the quality of the hospital's personnel and equipment and are known as structural quality measures. The output indicator has to do with the share of different hospital outputs as well as the average length of hospitalization. They include outpatient care, semi-hospitalizations and hospitalizations of more than a day.

The third category of simple indicators is the cost characteristics of hospitals including the shares and prices of both capital and labour input factors. The price of capital is measured as capital expenditure divided by the number of beds while the price of labor is considered using four categories of personnel namely physicians, nurses, other medical staff and administrative/ other support staff.

The fourth type of simple indicators which has to do with the hospital characteristics relates to the ownership status of the hospitals, affiliation of physicians for instance the number of private affiliated physicians and the hospital public status.

Methodology

The research design adopted in this study is the e*x post facto* design, since the study seeks to explore how hospital input variables influence output, both of which have already occurred before the researcher undertook the investigation. The study is descriptive in nature and analyses relationships of the variables using mean, maximum, minimum and simple ratios.

Data Sources and Distribution of Hospitals

Secondary data for employees (doctors and nurses), patient admissions and hospital beds were collected from all the 11 public hospitals rendering secondary health care in Cross River State for the period 2010-2014. These are the public hospitals rendering secondary health care services in the states which fall within the scope of this study. The distribution of these hospitals per senatorial district shows that there are 5 public hospitals in the south, 2 in the central and 4 in the northern senatorial districts. The data for the study were collected from the Department of Planning, Research and Statistics and the Directorate of Administration and Accounts of the State Ministry of Health. The Research and Statistics department receives monthly reports from all public hospitals in the state. These reports are thereafter published in the yearly report of the Ministry.

Study Variables: Productivity Indicators

The study made use of number of employees (doctors and nurses), number of patients on admission and the number of hospital beds for each year. These data was used to construct productivity indices such as labour and capital productivity. Labour productivity is the ratio of total number of admissions to employee while capital productivity is the ratio of total number of admissions to number of beds. Labour productivity in this study is estimated using two indicators; the number of admissions per total employee and the number of admissions per nursing staff. Capital productivity is measured using the number of admissions per bed.

Result and Discussion

Descriptive Statistics

The descriptive statistics for the data analysed showed mean admissions of 1002 patients, 60 beds and 107 employees in the hospitals studied for the period 2010 and 2014. The data revealed wide variations as the maximum number of admissions, number of beds and number of employees were 3640, 138 and 361 with the minimum at 4, 16 and 21 respectively. The standard deviation for the number of admissions was 995.7 while that for number of hospital beds and employees stood at 34.8 and 97.7 respectively.

The size of the public secondary care hospitals in Cross River State included in this study on the average declined by 3.4% for the period 2010-2014. Six hospitals witnessed increase in hospitals size, two hospitals decreased in size while three were static during the period. All urban hospitals increased in size while only three of the eight rural hospitals increased in size.

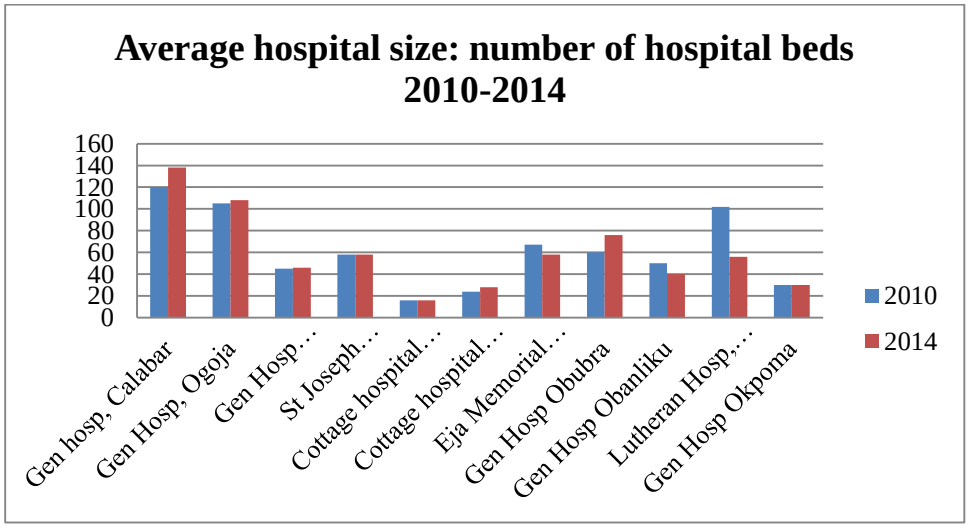


Figure 1: Average Hospital Beds in Selected Public Secondary Care Hospitals in Cross River State.

The total number of employees in the hospitals show that there is an average increase of 12.9% in the number of employees in all hospitals for the period 2010-2014 with six hospitals witnessing increase and five recording decrease in the average number of employees. The three urban hospitals had increase in

employees while five out of the eight rural hospitals recorded decrease in number of employees.

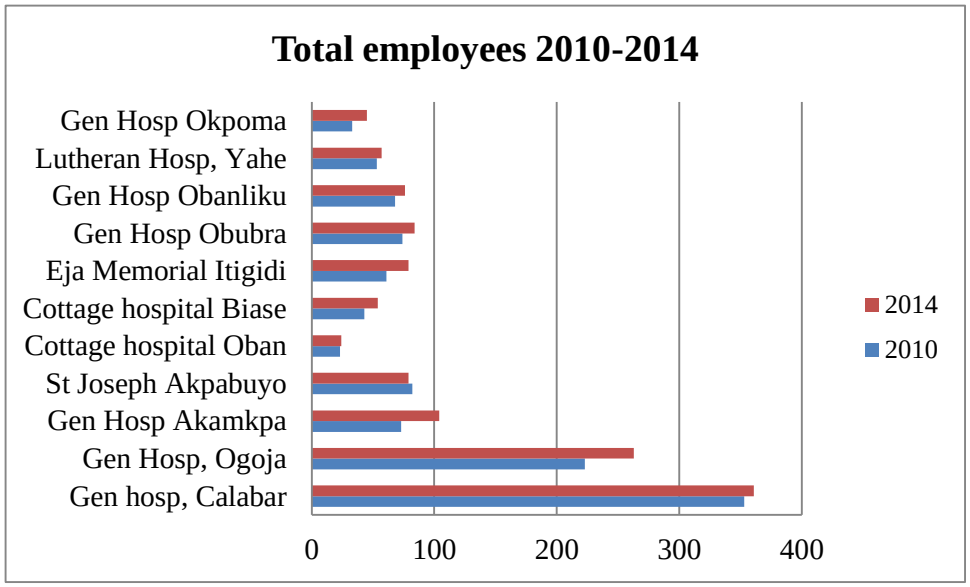


Figure 2: Total Employees in Selected Public Secondary Care Hospitals in Cross River State.

The number of admissions for all hospitals rose by over 118 percent for the study period. The three hospitals with the highest average increase in the number of admissions are General hospitals in Okpoma, Ogoja and Obubra while those with the lowest average increase are General Hospital, Calabar; St Joseph hospital, Akpabuyo and Cottage hospital, Oban.

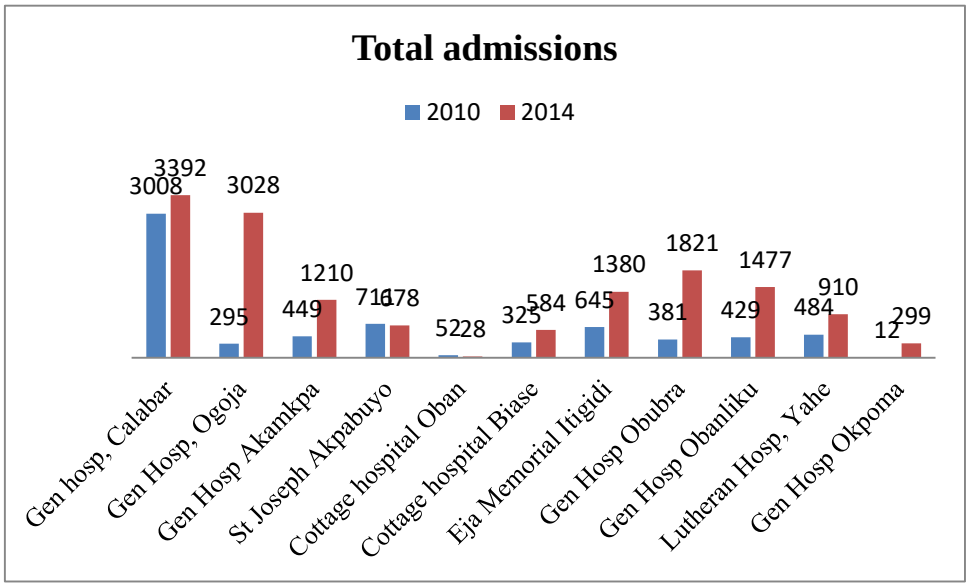
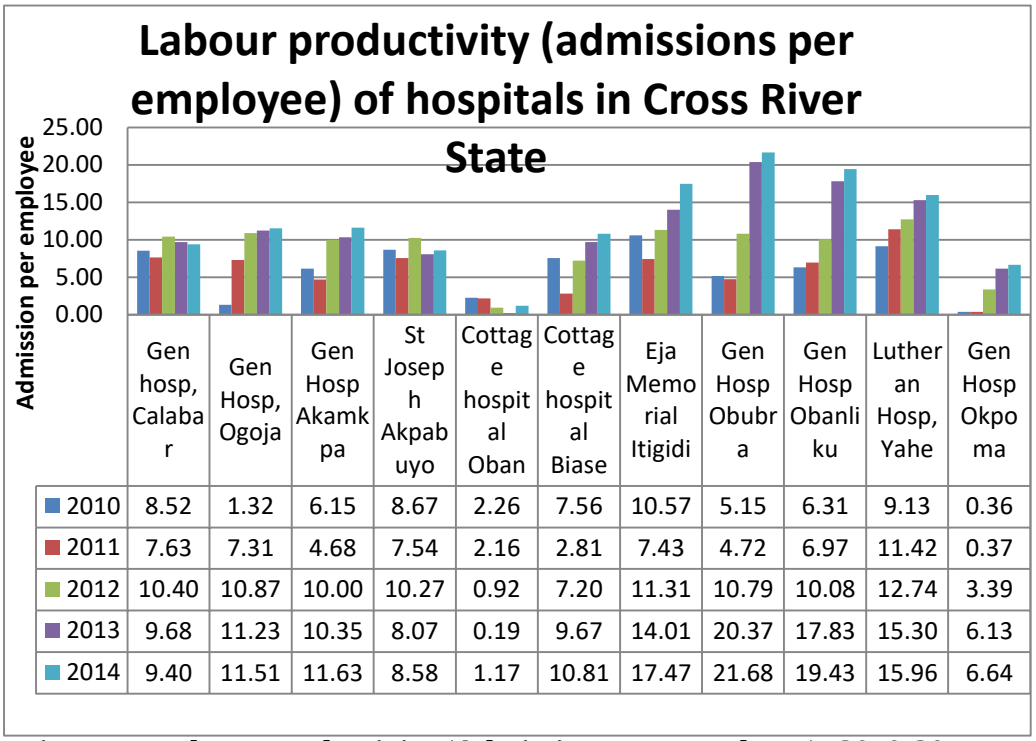


Figure 3: Total admissions in Hospitals in Cross River State: comparison for 2010 and 2014

Labour Productivity of Hospitals

Labour productivity in this study is estimated using two indicators; the number of admissions per total employee and the number of admissions per nursing staff. On the whole, out of eleven hospitals, nine had labour productivity improvement while two had productivity decline with the average productivity of all the hospitals put at 8.80. Admissions per employee is plotted in figure 4 and it shows that rural hospitals show a fairly stable rise in average productivity for the period rising from 6.25 in 2010 to 12.72 in 2014 with an average productivity of 8.84 while that of urban hospitals is 8.71 below the productivity of the entire group of hospitals.



	Gen hosp, Calabar	Gen Hosp, Ogoja	Gen Hosp Akamkpa	St Joseph Akpabuyo	Cottage hospital Oban	Cottage hospital Biase	Eja Memorial Itigidi	Gen Hosp Obubra	Gen Hosp Obanliku	Lutheran Hosp, Yahe	Gen Hosp Okpoma
2010	8.52	1.32	6.15	8.67	2.26	7.56	10.57	5.15	6.31	9.13	0.36
2011	7.63	7.31	4.68	7.54	2.16	2.81	7.43	4.72	6.97	11.42	0.37
2012	10.40	10.87	10.00	10.27	0.92	7.20	11.31	10.79	10.08	12.74	3.39
2013	9.68	11.23	10.35	8.07	0.19	9.67	14.01	20.37	17.83	15.30	6.13
2014	9.40	11.51	11.63	8.58	1.17	10.81	17.47	21.68	19.43	15.96	6.64

Figure 4: Labour Productivity (Admissions Per Employee); 2010-2014

As depicted in figure 4, average labour productivity (admissions per employee) of urban hospitals rose from 5.3 to 6.5 between 2010 and 2011 but remained fairly stable at 10 between 2012 and 2014 while that of rural hospitals witnessed a slight decline from 6.3 to 5.4 between 2010 and 2011 but maintained a steady rise from 5.4 to 12.7 from then to 2014.

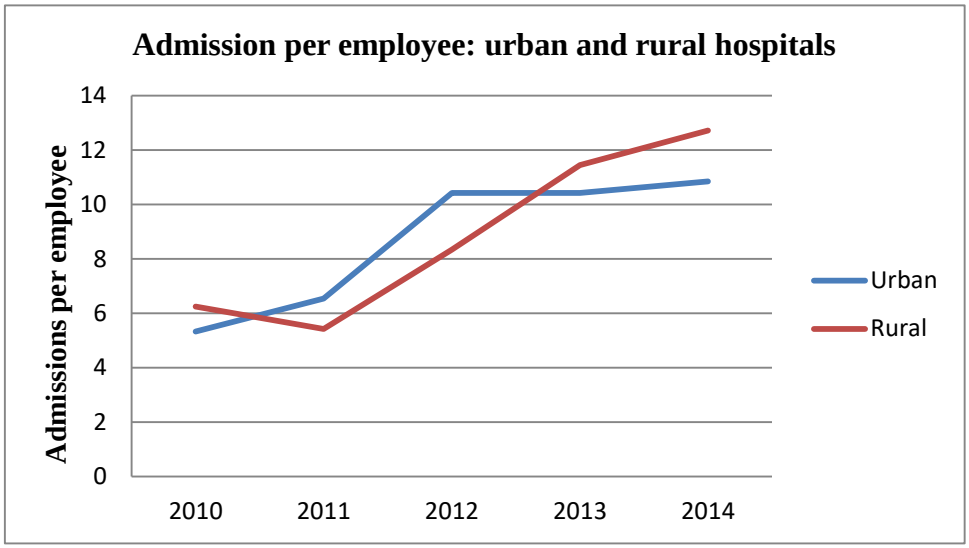


Figure 5: Labour Productivity (Admissions Per Employee): A Comparison of Rural and Urban Hospitals.

The second indicator of labour productivity is number of admissions per nurse, using this indicator ten hospitals had productivity increase while one (cottage hospitals, Oban) experienced a productivity decline. The top three hospitals with highest productivity increase over the period had productivity ranging from 17.4 and 23.1 and were rural hospitals while those with the lowest ratios had average productivity ranging from -1.2 to 1.4 had two rural and one urban hospital. The average productivity increase between 2010 and 2014 for all hospitals is 133%, while that of rural and urban hospitals are put at 135.4% and 129% respectively.

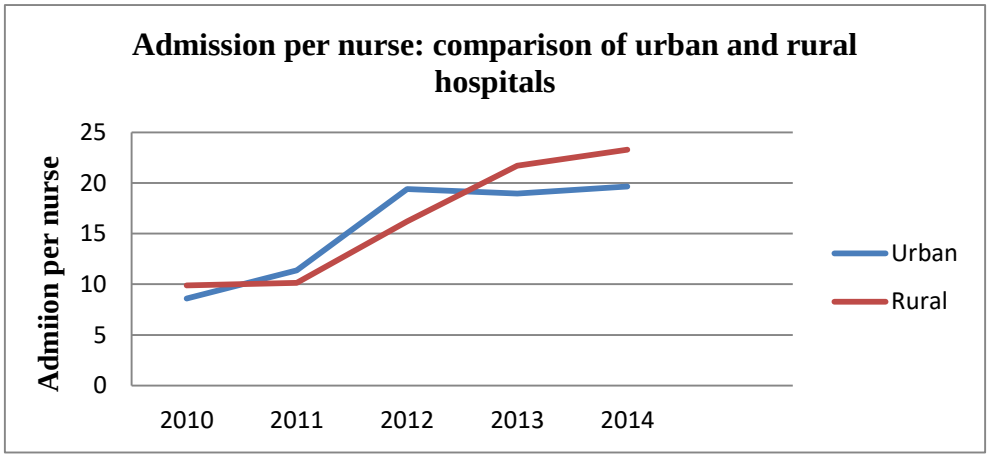
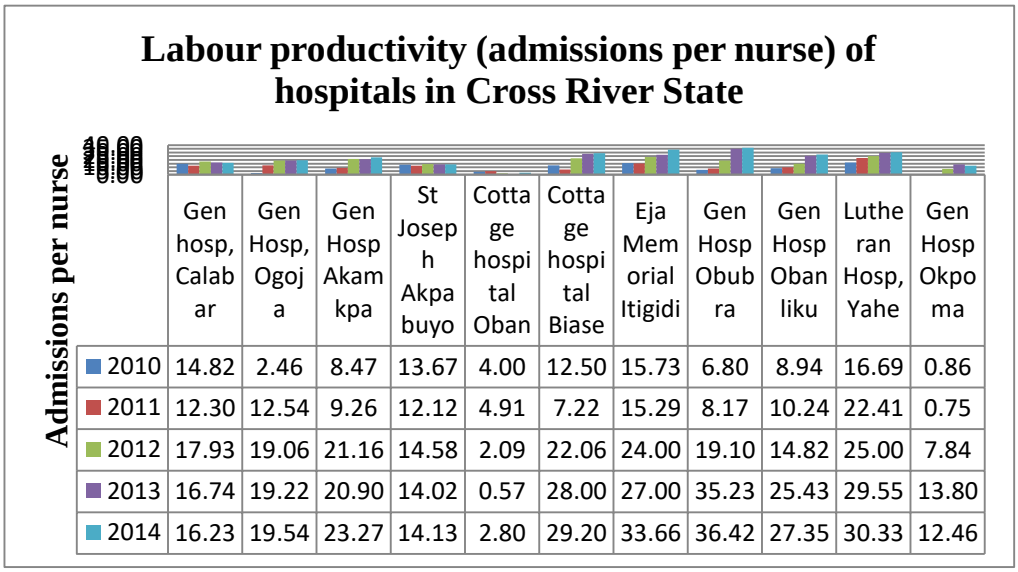


Figure 6: Labour Productivity (Admission Per Nurse): A Comparison of Urban and Rural Hospitals.



	Gen hosp, Calabar	Gen Hosp, Ogoja	Gen Hosp Akamkpa	St Joseph Akpabuyo	Cottage hospital Oban	Cottage hospital Biase	Eja Memorial Itigidi	Gen Hosp Obubra	Gen Hosp Obanliku	Lutheran Hosp, Yahe	Gen Hosp Okpoma
2010	14.82	2.46	8.47	13.67	4.00	12.50	15.73	6.80	8.94	16.69	0.86
2011	12.30	12.54	9.26	12.12	4.91	7.22	15.29	8.17	10.24	22.41	0.75
2012	17.93	19.06	21.16	14.58	2.09	22.06	24.00	19.10	14.82	25.00	7.84
2013	16.74	19.22	20.90	14.02	0.57	28.00	27.00	35.23	25.43	29.55	13.80
2014	16.23	19.54	23.27	14.13	2.80	29.20	33.66	36.42	27.35	30.33	12.46

Figure 7: Labour Productivity (Admissions Per Nurse); 2010-2014

Capital Productivity of Hospitals

Capital productivity is measured using the number of admissions per beds. Three hospitals witnessed productivity decline while nine had productivity improvements. There is a productivity increase of 131.8% for all hospitals between 2010 and 2014 with rural hospitals having a higher average

productivity increase (148%) than urban hospitals with average productivity increase of 108.7%.

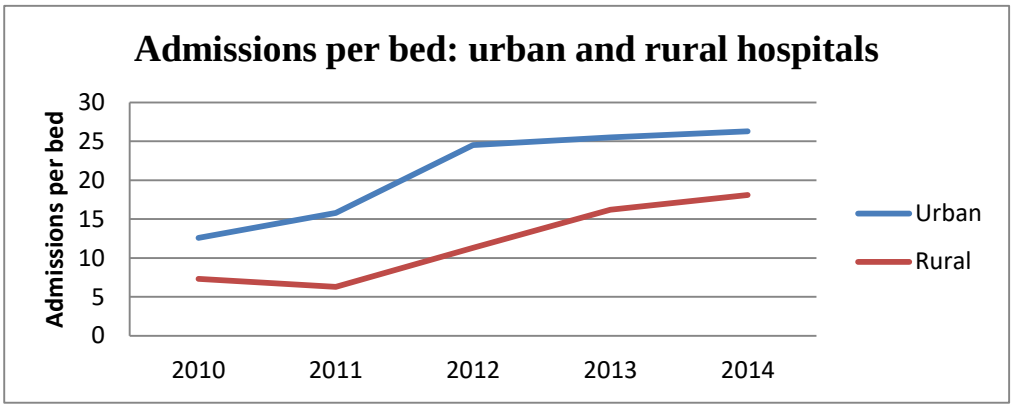
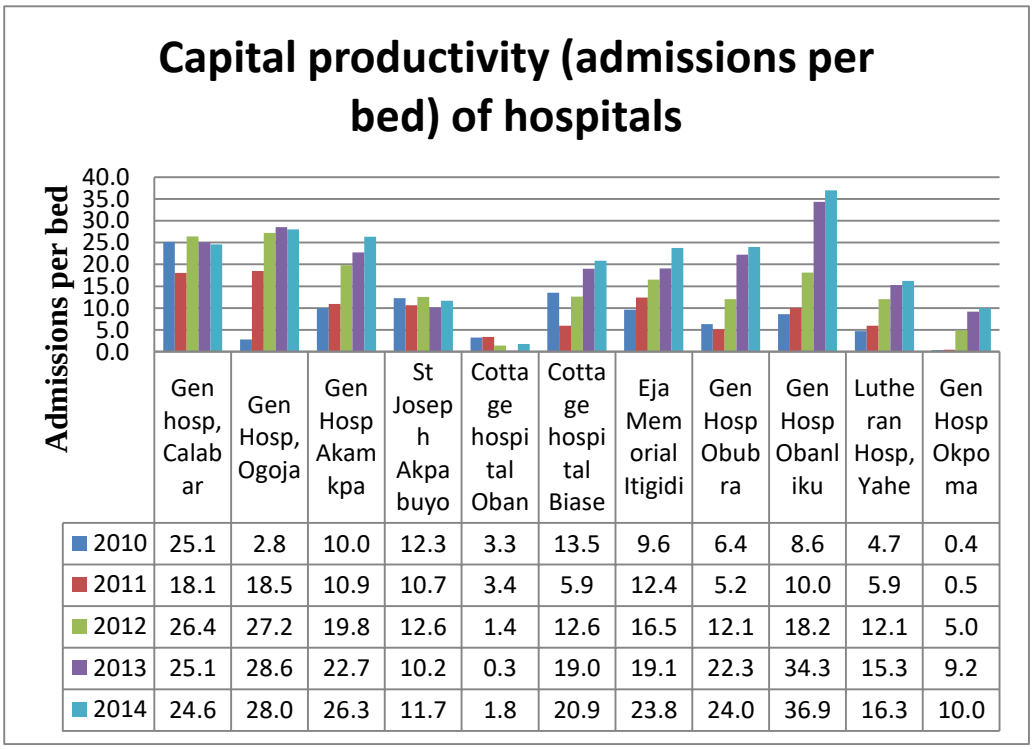


Figure 8: Capital Productivity; A Comparison of Rural and Urban Hospitals

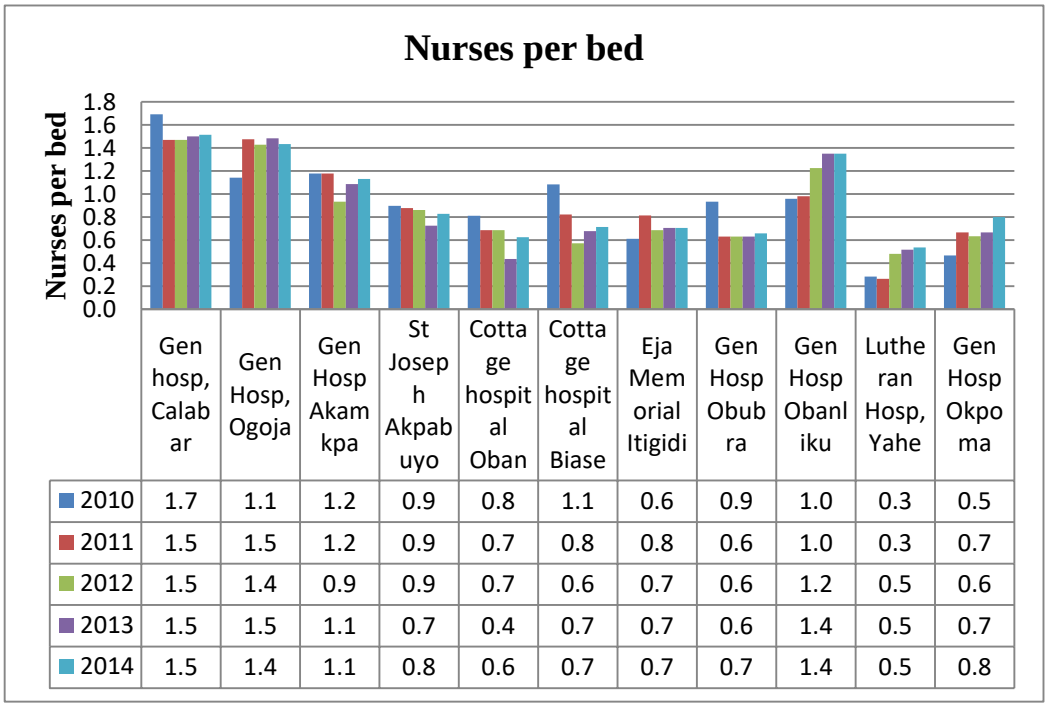


	Gen hosp, Calabar	Gen Hosp, Ogoja	Gen Hosp Akamkpa	St Joseph Akpabuyo	Cottage hospital Oban	Cottage hospital Biase	Eja Memorial Itigidi	Gen Hosp Obubra	Gen Hosp Obanliku	Lutheran Hosp, Yahe	Gen Hosp Okpoma
2010	25.1	2.8	10.0	12.3	3.3	13.5	9.6	6.4	8.6	4.7	0.4
2011	18.1	18.5	10.9	10.7	3.4	5.9	12.4	5.2	10.0	5.9	0.5
2012	26.4	27.2	19.8	12.6	1.4	12.6	16.5	12.1	18.2	12.1	5.0
2013	25.1	28.6	22.7	10.2	0.3	19.0	19.1	22.3	34.3	15.3	9.2
2014	24.6	28.0	26.3	11.7	1.8	20.9	23.8	24.0	36.9	16.3	10.0

Figure 9: Capital Productivity of Hospitals in Cross River State; 2010-2014

Structural Quality Indicators

These indicators do not directly measure productivity but can affect hospital performance and represent factors that may be relevant for policy formulation. In this study, two of such indicators are explored which are number of nurses per bed and number of doctors per bed



	Gen hosp, Calabar	Gen Hosp, Ogoja	Gen Hosp Akamkpa	St Joseph Akpabuyo	Cottage hospital Oban	Cottage hospital Biase	Eja Memorial Itigidi	Gen Hosp Obubra	Gen Hosp Obanliku	Lutheran Hosp, Yahe	Gen Hosp Okpoma
2010	1.7	1.1	1.2	0.9	0.8	1.1	0.6	0.9	1.0	0.3	0.5
2011	1.5	1.5	1.2	0.9	0.7	0.8	0.8	0.6	1.0	0.3	0.7
2012	1.5	1.4	0.9	0.9	0.7	0.6	0.7	0.6	1.2	0.5	0.6
2013	1.5	1.5	1.1	0.7	0.4	0.7	0.7	0.6	1.4	0.5	0.7
2014	1.5	1.4	1.1	0.8	0.6	0.7	0.7	0.7	1.4	0.5	0.8

Figure 10: Number of Nurses Per Bed

Seven hospitals had a drop in the number of nurses per bed while four had improvements in this ratio. Five of the hospitals with deterioration in nurses/bed ratio are rural while two are urban. A comparison of the urban–rural ratio for this indicators shows that urban hospitals are more productive with an average productivity of 1.4 while that of rural hospitals is 0.7. Virtually all the hospitals had no change in the number of doctors per bed due to the small number of doctors and the negligible change in number each year for the period of this analysis.

Summary of findings

The study found a general decline in the size (using number of beds) of hospitals by 3.4% and this is more in rural hospitals. There was an increase in the number of employees by about 13% with high concentration of these employees in urban hospitals. Admissions in public hospitals rose by over 100 per cent during the period with rural hospitals witnessing a higher increase. Two hospitals in northern senatorial district and one in the central had the highest rise in admissions while the three hospitals with the lowest admission increase are located in the southern senatorial district.

The labour productivity using admissions per employee shows that nine hospitals had improvements while three had decline for the period 2010-2014. Rural hospitals were more productive than urban hospitals. Productivity using admissions per nurse indicates that ten out of eleven hospitals had productivity improvements and rural hospitals were relatively more productive than urban hospitals. Capital productivity using admissions per bed indicates productivity improvements for nine hospitals with rural hospitals being more productive. In the structural quality indicator using number of nurses per bed, urban hospitals were more productive than rural hospitals.

Individual hospital analysis showed that the three hospitals with the highest consistent productivity improvements for four indicators (admissions per employee, admissions per nurse, admissions per bed and nurse per bed) are General hospital, Obanliku (with best improvement in capital productivity and hospital quality indicator); General hospital Obubra (with best indicator in the two labour productivity indicators) and General Hospital, Ogoja (second best improvement in capital and hospital quality productivity indicators). Conversely, hospitals with the worst productivity improvements or even decline in productivity for all indicators are Cottage hospital, Oban, St Joseph hospital Akpabuyo and General hospital, Calabar.

Relatively more hospitals had productivity improvements for four indicators (33 hospitals for 4 indicators) than those with decline or no productivity change (13) during the period of the study. Rural hospitals were more productive in the two labour productivity indicators than urban hospitals while the reverse was the case for the capital and hospital quality indicator. This

result shows that rural hospitals substitute more labour for capital while urban hospital (though with a higher percentage of the human resources for health) substitute capital for labour.

Conclusion and recommendations

The study analysed labour productivity using number of admissions per employee and number of admissions per nurse; capital productivity using number of admissions per bed; and structural quality indicators using number of nurses per bed and number of doctors per bed. There were productivity improvements for nine hospitals in admissions per bed and ten for admissions per nurse while productivity was static or declined in three and one hospital respectively for these labour productivity indicators. Nine hospitals witnessed capital productivity improvements while five had improvements in hospital quality. Rural hospitals were more labour productive while urban hospitals were more capital productive showing a relatively higher improvement in quality. The relative low productivity of labour in urban hospitals, with more employees, points to some level of labour redundancy in these hospitals which may result in wastage of resources spent on human personnel without a commensurate input in terms of man hours. Capital provision in rural hospitals, labour and hospital quality productivity improving measures such as remuneration for hours of work done and specialized staff/nursing training could enhance productivity of public secondary care hospitals in the state.

References

Ade, R. A., Kirigia, J.M., Zere, E.A., Barry, S.P., Kirigia, D.G., Kamara, C. & Muthuri, H.K. (2005). Technical Efficiency of Peripheral Health Units in Pujehun district of Sierra Leone: a DEA application. BMC Health Services Research 2005, 5:77 doi:10.1186/1472-6963-5-77 Available from: http://www.biomedcentral.com/1472-6963/5/77

Afzali. H. H. (2007). *Efficiency of Hospitals owned by Iranian Social Security Organisation; Measurement, Determinants, and Remedial Action*. Thesis submitted to the University of Adelaide for the award of Doctor of Philosophy in Public Health.

Agency for Health Care Research and Quality (2008). Identifying, Categorizing and Evaluating

Health care Efficiency Measures. AHRQ publication No. 08-0030 April. Final report prepared by Southern California Evidence based Practice Centre, RAND Corporation. Available on www.ahrq.gov

Brian, C., Corby, G. & Ronjoy, R. (2013). Measuring Output and Productivity in Private Hospitals

Chansky, A., Garner, C. & Raichoudhary, R. (2015) New Measure of Labour productivity for private community hospitals, 1993-2012. Monthly Labour Review, US Department of Labour. Bureau of Labour Statistics.

Commission on Macroeconomics and Health (2001). *Macroeconomics and Health: Investing in Health for Economic Development*, WHO, Geneva, 20 December 2001.

Cross River State Planning Commission (2007) *Economic Empowerment and Development Strategy* (CR-SEEDS), Calabar, Cross River State.

Evans,D.B., Tandon, A., Murray, C. & Lauer, J. (2001). The Comparative Efficiency of National Health Systems in Producing Health: An

Analysis of 191 Countries GPE Discussion Paper Series: No. 29 EIP/GPE/EQC World Health Organization.

Filippini, M. & Farsi, M. (2004). An Analysis of Efficiency and Productivity in Swiss Hospitals Swiss Federal Statistical Office and Swiss Federal Office for Social Security Final Report June 2004

Fisher, C. (2007) Multifactor Productivity of Physicians Offices: An Exploratory Analysis. Healthcare Financing Review 29(2), 15-32

Gu, W. & Li, J. (2015) Productivity in Residential Care facilities in Canada, 1989-2009. International Productivity Monitor 29: 18-37

Harper, M., Khandria, B., Kinoshita, R. & Rosenthal, S. (2010) Nonmanufacturing Industry contributions to Multifactor Productivity, 1987-2006. Monthly Labour Review. US Department of Labour. Bureau of Labour Statistics.

Mortimer, D. & Peacock, S. (2002). Hospital Efficiency Measurement: Simple Ratios vs Frontier Methods. Centre for Health Programme Evaluation, Working Paper No 135.

National Population Commission (NPC) [Nigeria] and ORC Macro. (2004). Nigeria Demographic and Health Survey 2003. Calverton, Maryland: National Population Commission and ORC Macro.

National Population Commission (NPC) (Nigeria) and ICF Macro. (2009). Nigeria Demographic and Health Survey 2008. Abuja, Nigeria: National Populaton Commission and ICF Macro.

Nghiem, S., Coelli, T. & Barber, S. (2011) Sources of Productivity Growth in Health Services: a case study of Queensland Public Hospitals. Economic Analysis & Policy, 41 (1) 37-48

Nwosu, E. J. (2000). The Challenge of Poverty in Africa. Skillmark Media Ltd., Owerri.

Nyong, M.O. (2005) Management Science: An Operations Research Empahsis in Economics and Business. Clear Line Publications Calabar, June.

Sharpe, A., Bradley, C. & Messinger, H. (2007) The Measurement of Output and Productivity in Health Care Sector in Canada; An overview. Centre for the study of living standards Report 2007-06. Available at http:www.csls.ca/reports/csls2007-06.PDF

Spitalnic, P., Heffler, S., Dickensheets, B. & Knight, M. (2016) Hospital Multifactor Productivity: An updated Presentation of two Methodologies. Department of Health and Human Services. Centre for Medicine Trustees Financial Projections. Available at: https//www.cms/gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFund/TechnicalPanelReports.html

Toodi, B., Featherstone, A. & Young, R.Z (1998). Efficiency Analysis of Hospitals in the Great Plains: An Urban-Rural Comparison. *1998 AAEA Meetings Selected Paper*

WHO (2005). Sustainable health financing, universal coverage and social health insurance. World Health Assembly Resolution 58.33. WHO, Geneva, Switzerland.

APPENDICES

One: Average Hospital size (number of beds) of Public Secondary Care Hospitals in Cross River State 2010-2014

Hospital	**Year**					**Total**	**Overall**
	2010	**2011**	**2012**	**2013**	**2014**		
General hospital, Calabar	120	138	138	138	138	672	134.4
General Hospital, Ogoja	105	105	105	105	108	528	105.6
General Hospital Akamkpa	45	45	46	46	46	228	45.6
St Joseph Akpabuyo	58	58	58	58	58	290	58
Cottage hospital Oban	16	16	16	16	16	80	16
Cottage hospital Biase	24	28	28	28	28	136	27.2
Eja Memorial Itigidi	67	43	48	58	58	274	54.8
General Hospital Obubra	60	76	76	76	76	364	72.8
General Hospital Obanliku	50	50	40	40	40	220	44
Lutheran Hospital, Yahe	102	102	56	56	56	372	74.4
General Hospital Okpoma	30	30	30	30	30	150	30
Total	677	691	641	651	654	3314	662.8
Overall	62	63	58	59	60	302	60.4

Source of data: Cross River State Ministry of Health, Calabar

Two**: Total Employees of Secondary Care Hospitals in Cross River State 2010-2014**

Hospital	Year					Total	Overall
	2010	2011	2012	2013	2014		
General hospital, Calabar	353	327	350	358	361	1749	349.8
General Hospital, Ogoja	223	266	263	267	263	1282	256.4
General Hospital Akamkpa	73	105	91	101	104	474	94.8
St Joseph Akpabuyo	82	82	71	73	79	387	77.4
Cottage hospital Oban	23	25	25	21	24	118	23.6
Cottage hospital Biase	43	59	49	55	54	260	52
Eja Memorial Itigidi	61	72	70	79	79	361	72.2
General Hospital Obubra	74	83	85	83	84	409	81.8
General Hospital Obanliku	68	72	72	77	76	365	73
Lutheran Hospital, Yahe	53	53	53	56	57	272	54.4
General Hospital Okpoma	33	41	44	45	45	208	41.6
Total	1086	1185	1173	1215	1226	5885	1177
Overall	98.7	107.7	106.6	110.4	111.4	534.8	106.96

Source of Data: Cross River State Ministry of Health, Calabar

Three: Total Admissions of Secondary Care Hospitals in Cross River State 2010-2014

S/n	Hospital	Year					Total	Overall
		2010	2011	2012	2013	2014		
1	General hospital, Calabar	3008	2496	3640	3466	3392	16002	3200.4
2	General Hospital, Ogoja	295	1944	2859	2998	3028	11124	2224.8
3	General Hospital Akamkpa	449	491	910	1045	1210	4105	821
4	St Joseph Akpabuyo	711	618	729	589	678	3325	665
5	Cottage hospital Oban	52	54	23	4	28	161	32.2
6	Cottage hospital Biase	325	166	353	532	584	1960	392
7	Eja Memorial Itigidi	645	535	792	1107	1380	4459	891.8
8	General Hospital Obubra	381	392	917	1691	1821	5202	1040.4
9	General Hospital Obanliku	429	502	726	1373	1477	4507	901.4
10	Lutheran Hospital, Yahe	484	605	675	857	910	3531	706.2
11	General Hospital Okpoma	12	15	149	276	299	751	150.2
	Total	6791	7818	11773	13938	14807	55127	11025.4
	Overall	617.4	710.7	1070.3	1267.1	1346.1		

Source of Data: Cross River State Ministry of Health, Calabar

Four: Hospitals with best Improvements and Slow Improvements/Decline in Productivity for all Indicators

Productivity indicator	Best improvements	Average ratio	Slow improvements/ decline	Average ratio
Admissions per Employee	Gen hosp Obubra	16.53	Cottage hosp. Oban	-48.4
	Gen hosp. Obanliku	13.13	St Joseph Akpabuyo	-1.0
	Gen hosp. Ogoja	10.19	Gen hosp. Calabar	0.87
Admissions per Nurse	Gen hosp Obubra	29.62	Cottage hosp. Oban	-1.2
	Gen hosp. Obanliku	18.41	St Joseph Akpabuyo	0.45
	Gen hosp. Itigidi	17.93	Gen hosp. Calabar	1.4
Admissions per bed	Gen hosp. Obanliku	28.3	Cottage hosp. Oban	-1.5
	Gen hosp. Ogoja	25.2	St Joseph Akpabuyo	-0.6
Nurses per Bed	Gen hosp Obubra	17.6	Gen hosp. Calabar	-0.5
	Gen hosp. Obanliku	0.4	Cottage hosp. Oban	-0.2
	Gen hosp. Ogoja	0.3	Cottage hosp. Biase	-0.4
	Gen hosp. Okpoma	0.3	Gen hosp. Obubra	-0.3

Source: Authors Computation Using Field Data

Five: Number of Hospitals with Productivity Improvements and Decline Per Indicator

S/n	Productivity indicator	No. of hosp. with improvements	No of hosp. static or decline
1	Admissions per Employee	9	3
2	Admissions per Nurse	10	1
3	Admissions per bed	9	3
4	Nurses per Bed	5	6
	Total	**32**	**13**

Source: Authors Computation Using Field Data

INTEREST RATE LIBERALISATION AND SAVINGS MOBILISATION IN NIGERIA

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Abstract

This study investigates the empirical effect of interest rate deregulation policy on savings mobilization in Nigeria using dataset that spanned 1981 through 2017, which was analyzed with Autoregressive Distributed Lag Models (ARDL). The Augmented Dickey Fuller unit root test was applied to filter and smoothen the dataset, while The ARDL Bounds test was used to test for cointegration among the variables . The ARDL results of this empirical study refutes the existence of Shaw's intermediation effect as regard the transmission mechanism between interest rate deregulation and savings mobilization, but it upheld the classical argument of savings being a function of income level. This imply that interest rate deregulation policy, has positive relationship with saving mobilisation in Nigeria but this is not statistically significant. It further implies that it is not an effective and efficient policy has it failed to be meet its purpose. The study therefore recommends that adoption of interest rate deregulation policy should be consistent and continuous, and monetary policy rules should be the order (guiding rule) and not discretionary policy

Keywords: Interest RateLiberalisation Policy, Savings Mobilisation, Auto-Regressive Distributed Lagged Model (ARDLM), Nigeria.

JEL Classification: E44; G38

Introduction

Financial liberalization concept metamorphosed from the Classical thought of laissez faire and has two dimensions (aspects) to the adopting Nation. The first is the domestic aspect of financial liberalization which entails deregulation of all financial markets within the economy by allowing market forces to determine the financial prices. While, the second is the international aspect of financial liberalization, which suggests free flow of international financial transaction by both government and the private sector. The basic intent of financial liberalization policy is to allow for free flow of investible funds from within and outside the country, so that these funds could be utilized by optimum investors, and generate positive real interest rate to the savers (or primary investors) (Bakare-Aremu, 2018).

Furthermore, Financial liberalization is the removal of every constraint that hinders the free flow of financial resources across borders, it equally entails not only deregulation of domestic financial markets but also allowance of market mechanism to allocate 'financial prices'(Ojo, 2004). In Nigeria financial liberalization policy came through Structural Adjustment Programme(SAP) as an integral part of the policy Programme in the mid-nineteen-eighties (1980s).The SAP was a product of the International Monetary Fund's (IMF) .The International Monetary Fund's (IMF) loan was a child of necessity because most of the developing nations as at that time needed the loans to smoothen their balance of payment difficulties occasioned by unequal trade relationship among nations.

It is pertinent to note that prior to that IMF's loan, most developing nations were 'having it hard'. This resulted to excessive control of the economy, which led to further problems of 'cash crunch'. The Nigerian economy was not an exception with low output resulting from poor saving culture, low investment, and poor infrastructural facility, and by implication a low living standard. Also, the economy at that period was largely dominated by public sector and excessive fiat control, and could be described as public driven economy.

Understanding the above narrative is fundamental for the concept of interest rate liberalization because it's the key policy concept for domestic financial liberalization. Interest rate liberalization or deregulation implies removal of

excessive control by fiat in fixing or determining the market rate of interest in the banking sector of any economy. Then, the market forces become major instrument of interest rate determination in the economy, which is the case during the period of financial liberalization. This, according to the proponents of liberalization policy will enable nominal interest rate to rise in accordance with the yearnings in the economy and in the long run will translate to positive real interest rate. The positive real rate of interest is an essential ingredient for saving mobilization and investment growth in the economy (Bakare-Aremu, 2018).

To have a clear understanding of financial liberalization and of interest rate deregulation, the work of McKinnon (1973) and Shaw (1973) in their separate but simultaneous studies advocate for financial liberalisation as a mechanism for domestic saving mobilization and by implication physical capital accumulation (investment growth) known in the literature as McKinnon complementarity hypothesis and Shaw's money balance hypothesis. The combination of these is known as McKinnon-Shaw financial liberalization thesis, which has since then provoked empirical debate among scholars.
It is important to note that there exists no consensus among these researchers as regard the theoretical argument of McKinnon-Shaw on financial liberalisation hypothesis. While some adopt the line of the proponents (Levine, 2001; Bekaert, Harvey &Lundblad 2003), others are of the opposing view (Kraay, 1998 and Rodrik, 1998; Eichengreen&Leblang, 2003), still, some other studies believe the effect vary from one country to another based on their stage of institutional and level of economic development, and on the advancement of their macroeconomic framework (Edwards, 2001 and Bekaert, Harvey &Lundblad, 2005).

The argument of protagonists of financial liberalization policy can never be misconstrued regardless of divergent empirical outcomes, the central idea of financial liberalisation thesis vis-à-vis interest rate deregulation was to stimulate economic growth via increased savings mobilization and investment growth through market determined interest rate and exchange rate.

However, given empirical divergent outcomes of financial liberalization and interest rate liberalization on macroeconomic outcomes, this study evacuates

the effect of interest rate liberalisation policy on savings mobilization in Nigeria. This objective is achieved using technique of Autoregressive Distributed Lag Model (ARDL).

Literature Review and Conceptual Clarification

The Concept of Interest Rate Liberalization

Prior to the introduction of financial liberalization policy, many governments of developing countries practiced financial repression (outright determination of interest rate by the fiat), in addition many banks were owned and controlled by governments including the determination of interest rates , in other words, the government controlled interest rate and were also the biggest customer to the banks they fully or partly owned. This practice of financial repression did not only discourage savings but also retarded private investment, and by implication economic growth.

Interest rate liberalization is an integral part of financial liberalization policy and it imply allowance for forces of demand and supply to determine the equilibrium rate of interest as orchestrated by the 'apostle' of financial liberalisation. Financial liberalization (FL) refers to the deregulation of domestic financial markets and the removal of restrictions on the flow of capital account. Figure 1 sheds some light on the conceptual clarification of what financial liberalisation entails and by extension interest rate deregulation.

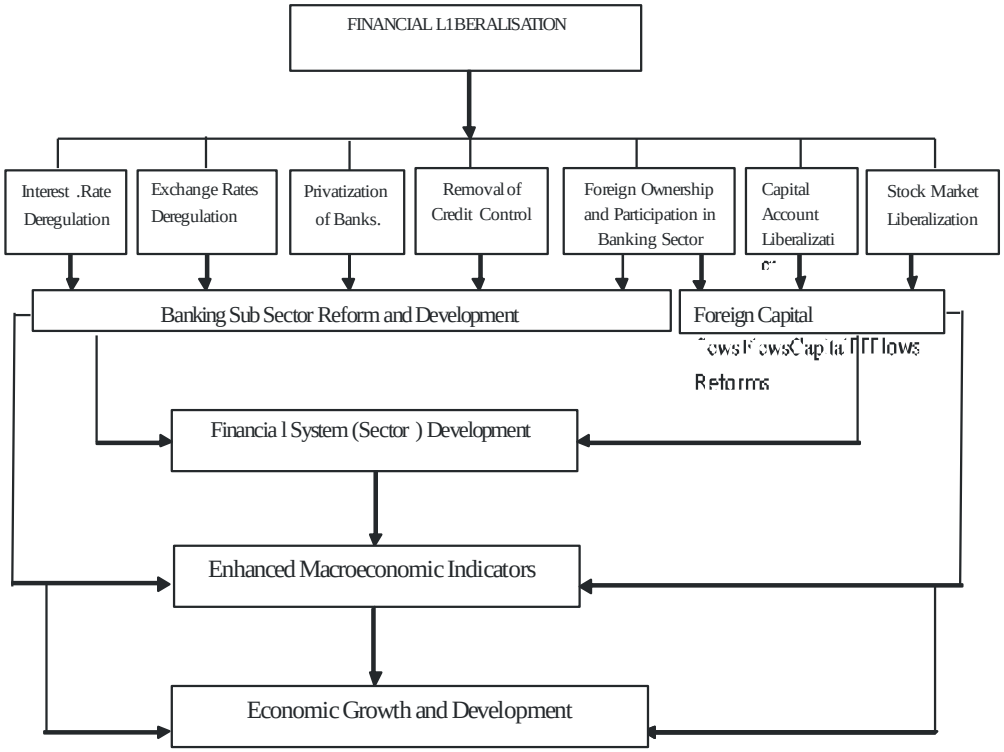


Fig.1 Conceptual Framework of Financial Liberalisation
Source: Bakare-Aremu (2018)

This study adopts the conceptual framework of financial liberalization to showcase the effect of interest rate deregulation on saving mobilization in Nigeria through its transmission mechanism. The main instrument of domestic financial liberalization is the interest rate deregulation (liberalization). This is because a liberalized financial market spurs a rise in interest rate through market mechanism, and as a result a rise in the volume of savings because savers would like to take advantage of rise in the market determined rate of interest, and by extension a rise in investment level. The reason for this is that when deposits rate is determined by market forces, available funds (savers' money) locate the prime users (investors) with the highest possible lending rate. What interest rate deregulation does is to reduce the spread of interest rate (IRS) overtime, such that in the long run the difference between deposit rate and lending rate would be negligible and thus guarantee positive real interest rate (Bakare-Aremu & Ohioze 2017)).

Empirical Literature

To determine the savings behavior in Nigeria, Anthony (2012) examined the effects of bank savings and bank credits ratios in Nigeria's economic growth process from 1970-2006. He adopted autoregressive distributive lag model and the results showed that average income (PCI), financial deepening (FD), and the spread of interest rate (IRS) which proxy financial liberalization have positive effect on the size of private domestic savings. Furthermore, it was shown that real interest rate (RIR) and inflation rate (INFR) had an inverse effect on the volume of private domestic savings and that there was a direct relationship between the previous values of total private savings, interest rate spread, credits to public sector, private sector credit, exchange rates and growth in Nigeria. In a similar study, Nwafor, Odey, and Effiong, (2017) investigated the impact of financial liberalization on savings mobilization in Nigeria using dataset that spanned 1970-2015 and, error correction mechanism, the study observed that than interest rates and financial liberalization policy index, per capita income and financial deepening contribute significantly to savings mobilization in Nigeria, and thus concluded that policies that could foster the two factors should be formulated and implemented.

Ofoegbu and Adegele (2013), affirmed that deregulation of Nigerian financial system brings about consumers satisfaction, efficiency, innovations and competition which provide customers the opportunity to bargain and gain competitive rate of interest due to the existence of many banks. Particularly in Nigeria, the policy of deregulation was designed among other things to restructure and diversify the productivity of the economy in order to stimulate domestic production for economic growth and profitability of commercial banks (Abogon, Olajide, and Oloba, 2014). Deregulation was also aimed at increasing competitive efficiency, improve allocation efficiency, reduce cost of financial intermediation and improve financial services and to rationalize the use of scarce resources.

Among the several policies of deregulation, interest rate deregulation performs outstanding function by efficiently allocating limited supply of credit in the economy and mobilization of savings. The main function of Interest rate is to regulate the flow of business and industrial behavior in an economy by

influencing the supply of and demand for loanable fund. According to Akpan (2004) interest rate deregulation involves the establishment of interest rate that equates the demand for and supply of savings and lending. Even though many economists have argued that the deregulation of interest rate has led to increase in the real interest rate, that is, interest rate that has taken into consideration the changes in price level, which has induced savings and investment in general (Amassoma, Nwosa and Ofere, 2011), the deregulation of interest rate in Nigeria has been met with different views by financial experts.

The extensive literature reviewed recorded divergent outcomes as regard the empirical effect of interest rate liberalisation (deregulation) on mobilization of savings, and the scope and method of analysis adopted by individual researchers differ. On this note, this study examines the dynamics of interest rate deregulation on savings mobilization in Nigeria.

Theoretical Framework

Financial Liberalization Theory

Laissez faire argument of liberalization of financial system could be traced back to the early writers of the seventieth century who stressed the need for liberal financial sector, popular among these writers were Adam Smith, Jeremy Bentham, John Lock, and Joseph Schumpeter (Fry, 1995). However, in recent times, a major intellectual discourse that re-emphasized and elaborately analysed the need for market mechanism to interplay in determination of financial 'prices' was found in the work of McKinnon (1973) and Shaw (1973). Both authors argued for financial freedom in the propositions contained in their independent publications. These propositions, taken together, have since become known as the McKinnon-Shaw hypothesis or the financial liberalisation thesis.

The duo rejected the Keynesian monetary models and structuralists ideas. They both argue that crucial assumptions in these paradigms are erroneous in the context of developing countries. They challenged the case for low interest rates and financial repression and advocated financial liberalisation as a growth stimulating economic policies.

Loanable Funds Theory

The loanable funds theory was developed by the neoclassical economists. This theory assumes that the determination of interest rate is predicated on changes in demand and supply of loanable funds. Robertson and Pigou among other neoclassical economists elaborated the loanable funds theory. For the neoclassical theorists, interest rate is the price of credit which depends on the demand and supply of loanable funds. The neoclassical theorists categorized demand for loanable funds into three sources comprising the government, investors and consumer. The demand for fund by the government or public sector is for the provision of public goods which the private sector cannot provide effectively and efficiently or at all. Investor's demand for loanable funds is for purchase of inputs and other capital goods required for boosting the level of production. Borrowings by investors for productive purposes are interest elastic and depend largely on the expected rate of profit relative to the level of interest rate (Ajilore, 2015).

Similarly, the demand for loanable funds by consumers for durable goods is interest elastic. Consumers' willingness to borrow tend to decline with rising levels of interest rate. Generally, the demand for loanable fund is a negative function of rate of interest. The supply of loanable funds by both private individuals and corporate savings are interest elastic. Increase in the rate of interest tends to increase the propensity to save and in turn the supply of funds.

Keynesian Liquidity Preference Theory

The liquidity preference theory is pioneered by John Maynard Keynes. In his seminal work "The General Theory of Employment, Interest and Money", Keynes categorized interest rate as a monetary phenomenon. Specifically, according to him, interest rate involves the reward for parting with liquidity for a given period of time. According to Keynes, the demand for and supply of money govern the rate of interest. The supply of money which measure aggregate quantity of money available in an economy is assumed to be perfectly inelastic. This stems from the role of the monetary authorities in fixing the quantity of money (monetary targeting) available in the economy. Therefore interest rate according to Keynes is determined at the point of

intersection or equality of demand for money and the exogenous supply of money, however, the monetary authority can influence interest rate through variation (increase or decrease) in its money supply. But this is limited to the point where demand for money becomes perfectly elastic, which Keynes regarded as liquidity trap. The liquidity preference theory developed by Keynes is mainly applicable to demand for money. It specifically measures the desire to hold money. Higher liquidity preference requires higher interest rate in order to induce holders of cash to part with the liquid assets (Ajilore, 2015). If no interest is payable to cash holders as an inducement to part with their liquid assets, the tendency of holding liquid will be very high. Therefore, the higher the rate of interest, the more likely people are to forgo their liquid assets and in turn more funds would be made available for borrowing.

Research Methodology

To answer the research question as hypothesized in this study, Ordinary Least Square (OLS) technique was used to estimate the effect of Interest Rate liberalisation on savings mobilization in Nigeria through estimation of Nigerian savings function to test the 'financial intermediation effect' as advocated by Shaw (1973). However, a pre-estimation test was carried-out to filter and smooth the dataset owing to the nature of time series data. The unit root test (Augmented Dickey Fuller (ADF)) was employed to filter and smooth the dataset, while Autoregressive Distributed Lag model bound test was applied to establish whether or not there is existence of long run relationship among all the variables. All the data used in this study were obtained from Central Bank of Nigeria (CBN) statistical bulletin (2017).

This study therefore hypothesized that there is no significant relationship between interest rate deregulation policy and financial intermediation (mobilization of savings) in Nigeria using econometric method known as Autoregressive Distributed Lag Model (ARDLM).

Adopting the Classical's savings model as used by Bakare-Aremu (2018) and beginning with its implicit savings function in equation (1) through its long run explicit and static linear relationship in equation (9), and the short run dynamics relationship in equation (10), which are to be estimated.

The classical two sector model is expressed in equation (2), given as implicit in equation (1) while the saving function began in equation (3) and well specified in equation (6),

$$S = Y - c \quad (1)$$
$$C = a + by \quad (2)$$
$$S = Y - (a + by) \quad (3),$$
$$but\ S = Y - a - bY \quad (4)$$

Inserting equation (4) into (3) gives;

$$S = -a + (1 - b)Y \quad (5),$$

Which could be written as;

$$S = -a + sY \quad (6),$$

$$where\ s = 1 - b$$

Considering other factors that influence savings other than the level of income as indicated in the deterministic savings function in equation (6) to have;

$$S = -a + sY + X \quad (7),$$

Where X represent the vector of other factors that influence savings. Therefore equation (6) could be rewritten in a model form as;

$$S_t = -a + sY_t + X_t + \mu_t \quad (8),$$

Explicitly, in a long run form, equation (8) could be written as;

$$GNS_t = \varphi_0 + \varphi_1 FDP_t + \varphi_2 IRS_t + \varphi_3 EXR_t + \varphi_4 GDP_t + \varphi_5 INF_t + \cup_t \quad (9)$$

While the short run dynamic model is presented in equation (10)

$$\begin{aligned}\Delta lGDS_t = \propto + & \sum \theta \Delta LGDP_t \\ & + \sum \theta \Delta LGDP_{t-2} \\ & + \sum \beta_1 \Delta IRS_t \\ & + \sum \beta_2 \Delta IRS_{t-1} \\ & + \sum \beta_3 \Delta IRS_{t-2} \\ & + \sum \gamma_1 \Delta FDP_t \\ & + \sum \gamma_2 \Delta FDP_{t-1} \\ & + \sum \gamma_3 \Delta FDP_{t-2} + \sum \varphi_1 \Delta EXR_t + \sum \varphi_1 \Delta EXR_{t-1} + \omega_1 \Delta LGDS_t \\ & + \omega_2 \Delta LGDS_{t-1} + \partial_1 \Delta INF_t + \delta ECV - - \end{aligned} \quad (10)$$

Data and Measurement of Variables

The data used spanned the period 1986 through 2017 for all variables, financial deepening was measured as the ratio of credits from commercial bank to private sector to gross domestic product; interest rate deregulation or liberalized interest rate was measured as the difference between lending and deposit rates which is known in the literature as interest rate spread (IRS), other variables such as Gross Domestic product (GDP), Exchange Rate (EXR), Gross Domestic Savings (GDS), and Inflation Rate (INFR) were taken as given by the Central Bank of Nigeria statistical bulletin and National Bureau of Statistics.(NBS)

Presentation of Empirical Results

Table1: Augmented Dickey Fuller Unit Root Test (The Test for Stationarity of Variables)

Variables	ADF statistics @ Level	ADF statistics @ First Difference	Order of Integration
EXR	1.607707	-4.603363***	I(1)
LGDP	-8.714488***	-11.093446**	I(0)
INFR	-2.58433	-5.563702***	I(1)
IRS	-2.888214	-7.521825***	I(1)
FDP	0.918559	-6.218253***	I(1)
LGNS	-1.535274	-4.916163**	I(1)
Source: Author's Computation via E-view 8.0.			

Table 1 shows the results of the stationarity tests at both the level and the first difference for all the variables in the model. The study applies constant, intercept and trend term in these tests as appropriate. The optimal lag length of each variable was chosen, using the Schwarz information criteria (SIC). As specified in Table 1, only one of the variables was stationary at level but after taking the first difference of other variables they became stationary. This is shown by ADF calculated statistics for all the variables, which is greater in absolute term than the ADF critical value at either 1 or 5 per cents level of significant (or both), as denoted by *** and **, respectively. This imply that the variables in the model are integrated of order 0 and 1, denoted by I(0) and I(1). The study further carried out a co-integration test, using the ARDL Bound's test. This result is shown in Table 2 as follows:

Table 2: ARDL Bounds Test (Cointegration Test)

ARDL Bounds Test
Date: 02/07/19 Time: 18:30
Sample: 1983 2017
Included observations: 35
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	6.988148	5

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

Source: Author's Computation via E-view 8.0.

As shown in Table 2, the null hypothesis of no cointegration is rejected, as the value of F-statistics is greater than the critical Bound (I0) and (I1) at all the significant level. Therefore this study report cointegration of all variables at one per cent level of significant. The results imply the existence of long-run relationship among the variables in the models. However, since the variables in the model are integrated in order of zero and one (i.e.I(0); I(1)), then the autoregressive distribute lag is implied. The ARDL result is presented in Table 3 for the savings function.

Table 2: Autoregressive Distributed Lag
Model Results
Dependent Variable: LGDS
Dependent Variable: D(LGDS)
Method: ARDL
Date: 02/07/19 Time: 18:29

Sample (adjusted): 1983 2017
Included observations: 35 after adjustments
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): D(LGDP) D(FDP) D(IRS) D(INFR)
D(EXR)
Fixed regressors: C
Number of models evalulated: 32
Selected Model: ARDL(1, 1, 1, 1, 0, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
D(LGDS(-1))	-0.340676	0.200347	-1.700433	0.1015
D(LGDP)	-0.703438	1.141738	-0.616111	0.5434
D(LGDP(-1))	1.892758	1.129828	3.675262	0.0063
D(FDP)	-16.32701	9.224878	-1.769889	0.0889
D(FDP(-1))	26.30680	9.953224	2.643043	0.0140
D(IRS)	0.051865	0.155472	0.333594	0.7415
D(IRS(-1))	0.285985	0.154936	1.845823	0.0768
D(INFR)	-0.017103	0.027951	-0.611874	0.5461
D(EXR)	-0.080656	0.037315	-2.161473	0.0404
C	0.016213	0.568759	0.028505	0.9775

R-squared	0.506044	Mean dependent var	-0.182480
Adjusted R-squared	0.492219	S.D. dependent var	3.002067
S.E. of regression	2.698156	Akaike info criterion	5.057971
Sum squared resid	182.0012	Schwarz criterion	5.502356
Log likelihood	-78.51449	Hannan-Quinn criter.	5.211372
F-statistic	3.898959	Durbin-Watson stat	2.231287
Prob(F-statistic)	0.09237		

Source Author.s Computation (2018)

The dynamic ARDL models' result of savings function in Nigeria is presented in Table 3. It is the short run savings model, and it takes into consideration the structural instability of individual variables and the adjustment process to long

run equilibrium since they are linearly integrated. The result reveals that interest rate liberalization policy promote savings in the short run but not statistically significant but income level (a year lag) promote saving and highly statistically significant at 1 per cent level. The economic implication is that interest rate derregulation policy has limited impact in promoting or mobilising savings in Nigeria in the short run, this could be as a result of some distortions via quasi regulations from fiats and inconsistency in the adoption of the policy.. Conversely, the income level support the savings mobilization as propounded by the Classical School of thought, that savings is a function of income.

On the other hand, exchange rate and inflation rate have theoretically expected signs, while the former is statistically significant 5 per cent, the latter is insignificant. Both inflation and exchange rate are inversely related to the gross domestic savings. Therefore, higher inflation will reduce saving mobilization likewise the exchange rate but the reverse is also true for both rates..

On statistical ground, the R-square and adjusted R-square shows that 50% variation in savings mobilization in Nigeria is explained by all included explanatory variables, and that if other variables that influences savings mobilization are put into consideration, the included variables in this model will still explain 49% variation in savings mobilization in Nigeria . The F-statistics shows robustness of the model at 1 per cent level of significant. The comparison of Durbin Watson statistics with R-square value show that the short run model as estimated is not spurious and thus is reliable. The Durbin Watson statistics further shows no autocorrelation or serial correlation in the model.

Post Estimation Tests

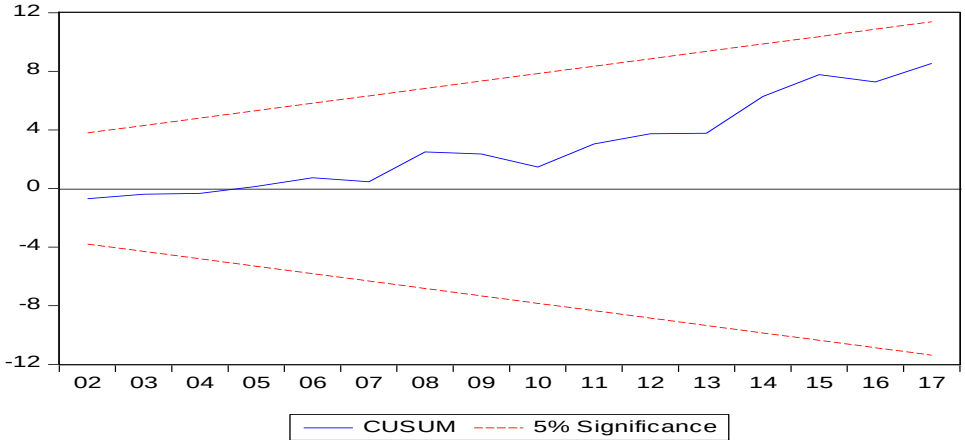


Figure 1: Cusum Stability Test Result

The Figure 1show that the plot of Cusum for the model under study are within the five per cent critical bound as indicated by the two lines that bounded the trend curve. The implication of this, for the model is that the parameters of the models do not suffer from any structural instability over the period of study.

Table 4: Serial Correlation LM Test: (Model 1)

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.638947	Prob. F(2,14)	0.9906
Obs*R-squared	0.757247	Prob. Chi-Square(2)	0.5196

The Breusch-Godfrey serial correlation test is used to test for existence of autocorrelation in the model. The null hypothesis is that there is no serial or autocorrelation, the results in Table 5 and 6 show absence of autocorrelation because the F-statistics is not significant at five per cent level. Therefore, the study shall accept the null hypothesis of no serial correlation in the model..

Conclusion and Recommendations

This study refutes the existence of Shaw's financial intermediation hypothesis as regard the transmission mechanism between interest rate deregulation and savings mobilizations. The Shaw's intermediation effect is not supported in this study because interest rate liberalization policy failed to adequately and efficiently influenced savings mobilization in the short and could also be in the long run. However, the classical argument of savings being a function of income level was upheld. This study shows the adoption of interest rate liberalization policy in Nigeria is below expectation as some forms of regulations still exist in the Nigerian financial markets.

In line with its findings, the following recommendations are made;

i. The government through Central Bank of Nigeria should allow free interplay of demand and supply to determine both deposit and lending rates without fixing a limit as orchestrated in financial liberalization thesis.
ii. The targeting of interest rate as intermediate monetary policy may improve investment standard through efficient saving mobilization in Nigeria.
iii. There should be consistency in the adoption of interest rate deregulation policy while the monetary authority should uphold the monetary policy rules rather than frequent application of discretionary policy.

References

Anthony, O. (2012). Bank Savings and Bank Credits in Nigeria: Determinants and Impact on Economic Growth. *International Journal of Economics and Financial Issues, 2*(3), 357-372.

Bakare-Aremu, T.A. (2016) Financial Liberalisation and Macroeconomic Convergence in West Africa Monetary Zone (WAMZ). An unpublished PhD Thesis, University of Lagos, Nigeria.

Bakare-Aremu, T.A. (2018) Empirical Examination of the Effect Globalized Financial System on Sustainable Development in Nigeria, *Dutse Journal of Economics and Development Studies, 6*(2), 147-159

Bakare-Aremu, T.A. (2018) The Effect of Monetary Policy Shock on Output Growth in Nigeria –A Structural VAR Modeling *Journal of Economics, Management and Social Sciences, Federal University of Wukari 4*(1) 20-36

Bakare-Aremu, T.A. (2018) An Empirical Assessment of Financial Liberalization Policy on Savings Mobilisation and Utilization in Nigeria, *Journal of Economics and Finance, Department of Economics, Nigerian Defence Academy, 2*(2) 79-94

Bakare-Aremu, T.A & Ohioze, W.F ( ) Financial Sector Development and Capital Market Performance Nexus: The Nigerian Experience, *Ilorin Journal of Finance, Department of Finance, University of Ilorin 1*(1) 82-98.

Bekaert, G. & Harvey, C.R & Lundblad, C (2003). Does Financial Liberalization Spur Growth? *Journal of Financial Economics, Elsevier, 77*(1), 3-55.

Edmond, M. (2010) Financial *Liberalization and Saving: Empirical Evidence from Rwanda*. An Unpublished Master Degree Dissertation, University of Nairobi, Kenya.

Makulu-Kumwanda, J.C. (2003) Financial Liberalisation and its impact on Savings Mobilisation and Investment: A case of Zambia. An unpublished master degree dissertation, University of Zambia.

Matthew, A. O. & Olowe, O. (2011) The Impact of Liberalised Financial System on savings, investment and Economic Growth in Nigeria. *Journal of Management and Manager 14*(2), 109-121.

Noula, A. G. (2012) Financial Liberalisation and Household Savings in Cameroon: A Bound Testing Approach. *Global Advanced Research Journal of Educational Research and Review 1*(2), 015-024

Nwadiubu A, Udeh S, & Onwuika, I. (2014).Financial Liberalisation and Economic Growth. The Nigeria Experience. *European Journal of Business and Management, 6* (14), 124-135

Nwafor J.U,F.I. Odey, & Effiong, C.E. (2017) Financial Liberalization and Domestic Savings in Nigeria: An Empirical Analysis, *International Journal of Development and Economic Sustainability 5*(6) 84-97.

Ojo, M.O. (2005). Towards a Common Currency in West Africa: Progress, Lessons and Prospect. *West African Journal of Monetary and Economic Integration, 5*(2), 47-79.

Okpara G.C (2010). The Effect of Financial Liberalisation on Selected Macroeconomic Variables lesson from Nigeria. *The International Journal of Applied Economics and Finance, 2,* 52–61.

Orji A, Eigbiremolen, G.O & Ogbuabor, J.E. (2013).Impact of Financial Liberalization on Private Investment.Empirical Evidence from Nigeria Data. *Review of Economics and Finance,*77-86

Santigie M.K (2009) Financial Liberalisation and Savings Mobilisation in Sierra Leone: A Test of McKinnon's Complementarity Hypothesis. *Journal of Monetary and Economic Integration, 10*(1), 131-170

Sulaimon L.A. & Oke, M.O. & Azeez, B.A (2012). Effect of Financial Liberalization on Economic Growth in Developing Countries. The Nigeria Experience. *International Journal of Economics and Management Sciences, 1* (12), 16-28.

PUBLIC HEALTH EXPENDITURE AND POVERTY IN NIGERIA

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Abstract

The study examined public health expenditure and poverty in Nigeria from 1980 to 2015. The main objective of the study was to examine the impact of public health expenditure on poverty in Nigeria. The data for the study were sourced from CBN statistical bulletin and World Bank World Development Indicator. The Augmented Dickey-Fuller test and Autoregressive Distributed Lag model were used as the main analytical tools. The ADF unit test result revealed stationarity of the variables at order zero and one, which satisfied the requirement to employ the ARDL Bounds testing approach. The ARDL Bounds test revealed the existence of long run relationship among the variables. Moreover, the result revealed that government capital and recurrent expenditure on health have positive but insignificant relationship with poverty in Nigeria both in the short run and long run. Employment rate has a positive and insignificant relationship with poverty in the long run. While in the short run, employment rate has a positive and significant relationship with poverty in Nigeria. The study concluded that public health expenditure has not significantly contributed to the reduction of poverty in Nigeria. Therefore, government should increase its health care expenditure to assist people living below poverty line in Nigeria including the provision of free basic health care.

Key Words: Health, Expenditure, Poverty, Employment and ARDL.

Introduction

The importance of good health cannot be overemphasized. Health improvements affect morbidity and labour force productivity thereby affecting the speed of economic development. Therefore, it is important to minimize the risk of falling ill and to promote health in order to increase productivity and earning capacity. This explains why one of the United Nations' Sustainable

Development Goals (SDGs) aims at ensuring healthy lives and promotes well-being for all at all ages.

Moreover, it is a well known fact among economists that the health sector is one of the driving forces and the engine of growth and development. This is because the health sector itself is highly labour-intensive and appropriate investments in it can lead to the creation of direct and indirect jobs which, in the process, will reduce poverty . There can be no doubt that investment in the production of different categories of health personnel including doctors, nurses/midwives, pharmacists, other clinical staff and management support staff would go a long way in addressing the health problems of the poor along with those of the non-poor through the employment channel (Umo, 2012).

Good health is a bulwark against poverty since it can consistently boost productivity and earnings. Improvement in health leads to improvement in life expectancy which is a robust indicator of human development. It has been widely upheld that 'health is wealth'. The reverse implication is that poor health spells poverty and ultimately death. Hence, it follows that getting the health infrastructure in good state is critical for delivering good health to the populace.

Over the years, successive governments in Nigeria have made serious effort in budgeting allocation to the health sector. An observation of the federal government expenditure in Nigeria revealed that both capital and recurrent expenditure on health sector has continued to rise due to the huge receipts from production and sales of crude oil. For instance, in 1986, 1990, 2000 and 2006, total expenditure (i.e., capital and recurrent) on health shows continuous increase in trend of ₦360.4M, ₦658.1, ₦18181.8M and ₦105590.0M respectively (CBN, 2007). Crispin (2013) envisaged that higher public spending in important sectors including health sector is expected to result in higher contribution of the health sector to economic growth, reduction of unemployment and poverty.

However in spite of increases in public spending in the health sector, the Nigerian health system is in shambles. People are still dying of malaria, typhoid fever, polio, fibroid and other common ailments due to non-

availability of functional medical equipment in the health sector, making health care delivery to become a private affair and dependent on ability to pay for basic laboratory and physician services. These have exacerbated diseases and poverty burden (Obansa and Orimisan, 2013). The proportion of Nigerians living in poverty is increasing every year. For instance, poverty incidence which was 27% in 1980 increased to 46.3% in 1985. It further increased from 65.6% in 1996 to 69% in 2010 (NBS, 2010). Strictly speaking, in Nigeria, poverty is a real problem and is widespread. As a result, people lack good health care, food, clothes, education and the other basic amenities. In fact, a lot of people don't have access to qualified medical specialists. The effect is low life expectancy, high infant mortality rate, high maternal mortality and low access to sanitation.

It is against this background that this study examines the relationship between federal government spending on health and poverty in Nigeria from 1980-2015. Specifically, the study examined the relationship between recurrent expenditure on health and poverty in Nigeria; examined the relationship between capital expenditure on health and poverty in Nigeria, examined the relationship between employment rate and poverty in Nigeria. The paper has five-sections, namely introduction, literature review, methodology, results and discussion; and conclusion and recommendations.

Conceptual and Theoretical Literature

The Concept of Health

Health is the level of functional and metabolic efficiency of a living organism. The World Health organization in 2013 defined health in its broader sense in its 1948 constitution as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity ". In this sense, people are suffering from ill health when they fall short of 'complete wellbeing'. Health is considered as a fundamental human right and the achievement of the highest possible level of health is one of the most important world-wide social goals (Nguyen, 2011).

The Nigerian government in recent times established Basic Health Centers in all the local government areas of the country. Health care services include health prevention and treatment. The services are used to improve and maintain health status whether people are suffering from health problems or

not. However, access to basic health services of acceptable quality is still a problem to many poor people in Nigeria. Nigeria's health care expenditure can be broadly divided into public expenditure and private expenditure. The former is mainly expenditure from public revenue or the state, while the later is expenditure by the households and corporate agencies on health care delivery.

However, estimates of public expenditure are somewhat more reliable than estimates of private expenditure. Umo (2012) submitted that in Nigeria, as in most other African countries, human health indicators are very poor and these are reflections of grossly inadequate health infrastructure. Examples of health statistics reflecting poor health infrastructure include low life expectancy, high infant mortality rate, high maternal mortality, high rate of HIV pandemic, low access to sanitation and water sources. One of the factors that account for poor health status in Nigeria is that the health sector has one of the lowest annual budget allocations in relation to the GDP. For instance, public expenditure on health as a percentage of GDP in 1990 and 1998 was 1.0% and 0.8% respectively compared to countries with high human development (HUD) group including Norway, Sweden, Canada, Belgium, Australia and United States who devoted 3-8% of their GDP to health in both 1990 and 1998. Olakunde (2012) given the low level of government spending, changes in the price of oil in the world market, a low tax base, and other preponderant issues, it will be very difficult to provide the essential health care services to Nigerians. Hence, health care will always be at the peril of underfunding by the Nigerian government.

In 2014, the allocation to the health sector was N262.74 billion out of which N9.109 billion was for the construction/provision of hospitals/health centers, N115 million was on HIV/AIDS control, N213.321 million was on cancer control and N85.653 million on malaria control (Udoka and Anyingang, 2015). In the health sector, between 2012 and 2013, 150 cases of polio were reported in Nigeria. Nigeria and Germany signed an MOU to spend €35.0 million on the 5^{th} phase of the polio eradication programme (CBN, 2013). In terms of health personnel, the numbers of required professionals is grossly insufficient. For instance, the number of doctors who graduate from medical schools remained static (2,300) from 2002 to 2006. In some areas like

community health professionals, the number actually decreased from 9,000 in 2002 to 6,600 in 2006 (Umo, 2012). In the same vein, Eneji, Juliana and Onabe (2013) wrote that public expenditure has not provided adequate health infrastructure, especially in the rural areas . The sector lacks qualified healthcare personnel and regulations, as talented doctors, pharmacists, nurses and other health professionals continue to leave Nigeria to apply their services more profitably in other countries. Nigerians are being denied quality healthcare services, especially those in the rural areas. High profile individuals in Nigeria, especially the political class, continue to undertake medical tourism abroad, further widening the inequality of access in healthcare . It is very important to step-up investment in all components of health infrastructure including personnel to cope with the explosive population growth requiring medical services. The federal government has occasionally stated her commitment to prioritize health expenditure in terms of the threat and incidence of certain diseases such as HIV/AIDS and malaria, particularly, at the preventive level (Umo, 2012). Even with this, the people are still dying of common illnesses like malaria and others as a result of lack of infrastructure for which funds were allocated. Even with the allocation to the sector, there has not been a commensurate improvement in the health sector as citizens die due to ignorance of the danger of some illness as like cancer, inadequate or dysfunctional medical equipment.

Nigerian Health Policy

Health care policies are the statements of intentions and aspirations of government for the provision of normal, mental and physical development and functioning of the human health. It includes health protection measures; promotion of health; prevention of sickness; and curative and protective medicine in all its ramifications. Health care is a shared responsibility in Nigeria.

As reported by Ayanleye (2013), the federal government launched its Primary Health Care plan (PHC) in August 1987 as the cornerstone of the country's health policy. The policy was intended to affect the entire national population, with its main objectives including accelerated health care personnel development; improved collection and monitoring of health data; ensured availability of essential drugs in all areas of the country; implementation of an

Expanded Programme on Immunization (EPI); improved nutrition throughout the country; promotion of health awareness; development of a national family health program; and widespread promotion of oral rehydration therapy for treatment of diarrhoea disease in infants and children. The federal government further instituted a National Health Policy in 1988 with the primary objective of improving the health status of the people and allowing Nigerians have access to wholesome, productive, social and economic lives. The National Health Plan document released by Nigeria's Federal Ministry of Health proposed that: The goal of the National Health Policy shall be to establish a comprehensive healthcare system based on primary healthcare that is promotive of protective, preventive, restorative and rehabilitative, to every citizen of the country within the available resources so that individuals and communities are assured of productivity, social well – being and enjoyment of living. Unfortunately, the current situation is worse now than when that statement was made years earlier. Many of the citizens still do not have access to quality healthcare and many have died. The current policy framework was derived from the National Health Policy, the draft National Health Plan, the National Vision 2010 Report. The vision for health sector reform is to improve the health status of all Nigerians, and to attain a level of health care that would permit all Nigerians to live a socially and economically productive life. However the reality is the opposite as quality healthcare is still out of the grasp of the average Nigerian.

The Concept of Poverty

Poverty may be defined in either absolute or relative terms. In absolute terms, a person is poor when he or she cannot afford basic necessities of life such as food, clothing, shelter, basic education, etc. It is sometimes referred to as abject poverty. Supporting this, World Bank (2011), defined poverty as "the economic condition in which people lack sufficient income to obtain certain minimal levels of health services, food, housing, clothing and education which are necessities for standard of living". Todaro and Smith (2011) defined it as the situation of being unable or only barely able to meet the subsistence essentials of food, clothing, and shelter. Absolute concept of poverty in terms of interpretation compares two numbers for each person or group of people, the person's annual income and the poverty threshold or poverty line. Poverty line is the level of income required for basic subsistence. Using this measure,

the National Bureau of Statistics estimated that 54.4% of Nigerians were absolutely poor in 2004. International absolute poverty has been estimated at two levels: $1 a day and $2 a day. Based on this estimate, the World Bank has shown that poverty rate in Nigeria was 70.8% which translates into 106.2 million people (based on 150 million in 2007 population). At $2 per day, the poverty rate is 92.4% translating into 138.6 million Nigerians (using 2007 population) and about 154 million based on the current population of 167 million (Umo, 2012).

It is important to note that it is absolute poverty that economic development policy seeks to eliminate. It is indeed possible to end this type of poverty as experience in most developed countries has shown. In other words, it is possible to find a solution to end basic material deviation. This explains why United Nations-driven sustainable development goals (SDGs) aim at bringing poverty to an end in all its forms everywhere. That is, **by 2030 eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day and 1.2 by 2030; reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.**

In relative terms, we can say that some households are poor in comparison with others. Generally, poverty is concerned with the relationship between the minimum needs of man and his inability to satisfy these needs.

According to Obadan (1996) among economists, poverty has often been defined as a system of low income or low consumption. This is always used for measuring poverty line. The variables that determine the poverty line are values of income or consumption necessary to purchase the minimum standard of nutrition and other necessities. Therefore, people are counted as poor when their measured standard of living in terms of income or consumption is below the poverty line. The poverty line is a measure that separates the poor from the non-poor. It is important to know that poverty has both income and non-income dimensions. The point being made here is that, apart from income, other factors also determine the poverty line. To this effect, Chambers (1996) has argued that poverty refers to the bulk of physical resources, assets and income. But it includes more than being income-poor. The various definitions

of poverty have been summarized by Conway (2009) in this way; Poverty is lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not being able to go to school and not being able to read. Poverty is not having a job, fear for the future and living one day at a time. Poverty is losing a child to illness brought about by unclean water. Poverty is powerlessness, lack of representation and freedom.

Poverty has effects on the national economy and individuals respectively. One of the adverse effects of poverty is that it leads to low standards of living. The poor and their families cannot afford good meals, descent housing, good education or medical care. They therefore, see themselves as nuisance to society. Another effect of poverty is that it leads to a high crime rate. The poor may resort to stealing, prostitution and kidnapping. Since a larger proportion of the poor have low level of human capital, which affect their productivity. The overall effect will be a decline in GDP. Finally, the high incidence of poverty in Nigeria today has adversely affected the revenue base of the government. The poor are the unemployed, the young, the aged and the handicapped persons. Consequently, they do not pay taxes to the government rather; they depend on government for their livelihood. This development has adversely affected government's revenue thereby slowing the pace of rapid economic growth and development (Gbosi, 2012).

Cultural Theory of Poverty: This theory has its origins in the work of the American anthropologist who studied poor communities in Mexico and Puerto Rico in the 1950s and 1960s. Lewis (1968) argued that in the Third World societies the poor have a distinctive culture with attitudes, norms and values which differ from those of the mainstream culture. This culture of poverty includes attitudes of resignation and fatalism which lead the poor to accept their fate rather than attempting to improve their lot. This can be seen as their failure. The culture of poverty emphasizes immediate gratification and a concern with the present. This makes difficult for the poor to plan or save for the future, join trade unions, political organizations and community groups which might help them to improve their situation. The theory believes that this way of life was passed on from generation to generation. Children learn the culture from an early age. It helps them to cope with day to day life in poverty, but means they are ill-equipped to take advantage of opportunities such as education which might help them to escape from poverty. In this way, the

poverty of parents is passed on to children. Therefore, people inherit poverty and their actions including lack of education, and laziness reinforce poverty. However, this theory has failed to recognize that the degree of resignation and hopelessness exhibited by the poor is a consequence rather than a cause of being poor. Hence, the structure of the economy should also be examined.

Structural/Economic Theory of Poverty

This theory explains that poverty emanates from the way the economy is structured. Many of those who support social democratic theories see the existence of poverty as a part of the inequality created by the labour market in the capitalist economic systems. They point out that most of the groups in poverty are either excluded from the labour market – for example unemployed people, people over retirement age and people unable to work because of sickness or disability – or they are in a weak position in the labour market and thus tend to be restricted to low paid, often casual and insecure work . Therefore, employment level and the nature of income distribution are among the factors that encourage poverty. This line of argument was developed by Townsend (1979), Townsend, Corrigan and Kowarzik (1987), Townsend argued that poverty is closely related to class. The majority of the poor occupy unskilled or semi-skilled jobs. Hence, people are poor not because they are not hard working but do not have the opportunity to work. He is made poor as a result of the economic system that denied him his share of the income and inequitable distribution of income. For Townsend, poverty will only be tackled effectively by radical social policies. The state must redistribute resources from the rich to the poor and direct investment towards social priorities such as health, education and housing. This line of reasoning makes it clear that government must be actively involved in several activities to eliminate poverty. This is in tandem with Wagner's observation.

Adolph Wagner's Theory of Increasing Government Activities (Expenditures)

Adolph Wagner propounded the theory of increasing government activities. According to Wagner's thesis, which he wrote in 1880's there are tendencies for the activities of all layers of government to increase both extensively and intensively. Therefore, there is tendency for government expenditure to increase. He noted that social progress is the reason for increase in the

activities of the government. He forecast an increase in the ratio of government expenditure as per capita income rises. Specifically, he observed a tendency for government expenditure to increase directly with the level of industrial output and therefore called for increased allowance for "social consideration" in the conduct of industry with anticipation of continuous expansion of the public sector. Policy makers and economic advisers employ Wagner's law as the basis for their decision any time there is need for important economic decision making on expenditure (Okoh, 2015). Representing Wagner's law functionally, GE = f (Y) where GE is government expenditure and Y is national output. Furthermore, an increase in government expenditure is expected to impact positively on an economy which is the prayer of Keynesian economics.

The Keynesian Theory

John M. Keynes (1936), a British economist and the father of macroeconomics argued that public expenditure is a fundamental determinant of economic growth. Keynes theory made it clear that fiscal policy instrument (i.e., government expenditure) is an important tool for achieving short-term stability and superior long run growth rate. To achieve stability in the economy, this theory prescribes government interventions in the economy through economic policy specifically fiscal policy. To the Keynesians, public expenditure will contribute positively to economic growth which, in turn, will reduce unemployment and poverty. For instance, government expenditure in the health sector will have multiplier effect on the economy. Government expenditure on health and education will raise the productivity of labour and increase the growth of national output which in turn, will reduce unemployment and poverty. To reduce or eliminate poverty in an economy, Hull (2009) argued that increasing employment is critical if the poor must earn income by offering their labour as their sole asset. Keynesians believe that poverty is the outcome of structural factors which could be economic or social or political. However, structural factors including poor levels of human capital and lack of business capital, infrastructure and public institutional capacity always act to increase poverty levels by way of causing involuntary unemployment. On the above arguments, therefore, government (spending) on the health sector is essential to reduce poverty through multiplier effect. That is, government spending through allocation and composition to health

sector and programmes has the objective of growth, employment and poverty reduction. Therefore, the Keynesian framework in which an increase in government expenditure results to increased consumption and economic growth thus leading to poverty reduction was adopted in this work.

Empirical Literature

Health is a good form of human capital formation and looking at the association between health/capability and poverty is very important. Moreover, Ilesanmi, Adebiyi and Fatiregun (2017) examined the contribution of household health care expenditure to poverty in Oyo State, South West Nigeria: specifically, a rural and urban comparison. They employed a comparative cross-sectional study using a tested and adapted version of the Living Standard Survey questionnaire to collect data on 5,696 household members from 1,434 household representatives. Representatives were selected using a multistage sampling method. The result revealed that health care was utilized by 1,006 (70.2%) of the 1,434 households studied. Of urban and rural households, 637(89.2%) and 369(51.3%) utilized health care services, respectively. Only 513(29.8%) were poor while 1519(88.2%) were poor after considering the cost of utilizing health care. Increase in poverty of 66.2% occurred because of health care utilization ($p<0.001$).

Odior (2015) examined the effect of public spending policy on the basic health services in the reduction of poverty and in achievement of millennium development goals in Nigeria. The study employed a dynamic CGE-MS method in analyzing the likely effects of an increased in public expenditure on health in Nigeria. The outcome showed that it will be very hard for Nigeria to attain the Millennium Development Goals target, in terms of health and reduction of poverty by the year 2015, because the policy measure in the analysis was unable to meet this goal. However, the simulated analysis showed that if government resources are redirected to public health systems, it will go a long way in determining the reduction of poverty in Nigeria.

According to Rashad and Sharaf (2015), healthcare payments could drive households with no health insurance coverage into financial catastrophe, which might lead them to cut spending on necessities, sell assets, or use credit. In extreme cases, healthcare payments could have devastating consequences

on the household economic status that would push them into extreme poverty. Using nationally representative surveys from three Arab countries, namely, Egypt, Jordan, and Palestine, this paper examines the incidence, intensity and distribution of catastrophic health payments, and assesses the poverty impact of out-of-pocket health payments (OOP). The OOP for healthcare were considered catastrophic if it exceeded 10% of a household's total expenditure or 40% of non-food expenditure. The poverty impact was evaluated using poverty head counts and poverty gaps before and after OOP. Results showed that OOP exacerbate households' living severely in Egypt, pushing more than one-fifth of the population into a financial catastrophe and 3% into extreme poverty in 2011. However, in Jordan and Palestine, the disruptive impact of OOP remains modest over time. In the three countries, the catastrophic health payment is the problem of the better off households. Poverty alleviation policies should help reduce the reliance on OOP to finance healthcare. Moving toward universal health coverage could also be a promising option to protect households from the catastrophic economic consequences of health care payments.

Matthew, Adegboye and Fasina (2015) looked at government spending on health and its effect on health outcomes in Nigeria between 1979 and 2012. The study employed the Johansen Co-integration and the Vector Error Correction Model (VECM) econometric techniques to determine the long-run relationship between public spending on health and health outcomes in Nigeria. The study found out that public spending on health has a significant relationship with health outcomes in Nigeria. It was also discovered that environmental factors such as carbon dioxide emissions which was used in this study affects individuals' health.

Osundina, Ebere and Osundina (2014) disaggregated government spending to see the effect of government health expenditure on poverty in Nigeria using co-integtration and VEC methods of econometrics to analyze time series data of 43 years. The researchers found expenditure on health to be insignificant to poverty reduction in Nigeria.

Furthermore, the study of Osundina, Ebere and Osundina (2014) is not in tandem with the study of Awe (2013) who examined the impact government

expenditure on poverty reduction in Ekiti State, Nigeria, using chi-square test and found expenditure on health to have a significant and positive impact on poverty reduction in Ekiti State.

Eneji, Juliana and Onabe (2013) examined the relationship between healthcare expenditure, the health status and national productivity in Nigeria. They focused on the public healthcare expenditure from 1999-2012 for objective analysis. They used questionnaires to elicit responses. They discovered that the causal relationship is weak in the Nigeria scenario. If people are a country's principal asset, then their health status defines the course of development, and their health characteristics determine the nature and direction of sustainable human development.

Bales (2013) investigated the impact of ill health on labour supply, earned income, health expenditures and consumption and coping through adjustment to household asset holdings and unearned income by use of fixed effect Poisson regression for Vietnam. Bales found that illness reduced significantly labour days of households faced with illness and had insurance and households faced with onset of disability. However, the wage income for these households was not affected by reduced labour days. On the other hand, health shocks had significant effects on out-of-pocket health spending due to illness and disability, of which it was lower for households with health insurance. Household consumption per capita for food and non-food items remained at the same level implying a coping mechanism. Households smoothed consumption by borrowing, transfers, dis-saving and sale of assets. Reduced labour supply due to onset of disability significantly affected the poor. According to the study findings, the poor self-employed non-farm income was negatively affected by illness to uninsured adult and onset of disability, but positively affected by the death of an adult in the household possible due to adjustment to health shocks. The study by Bales for Vietnam, while showing the importance of increasing population under health insurance coverage is crucial for mitigating the effects of health shocks especially among the uninsured poor; is based on household survey which is subject to sampling and non-sampling errors.

Olakunde (2012) examined the different financing mechanisms that have been used in Nigeria, including the National Primary Health Care Development Fund proposed for increasing the resource allocation to primary health care. The study drew on available and relevant literature to provide an overview and the state of public health care financing in Nigeria. The researcher concluded by recommending the need for Nigeria to explore and strengthen other mechanisms of health system and shift focus from out-of-pocket payments, address the issues that have undermined public health care financing in Nigeria, improve on evidence-based planning, and prompt implementation of the National Health Bill when signed into law.

Asghar, Hussain and Rehman (2012) studied the long run impact of government spending in various sectors on poverty reduction in Pakistan for the period of 1972-2008 applying co-integration and Error Correction Mechanism (ECM). Poverty as the dependent variable was measured using headcount index while the independent variables were: government spending on health government spending on education; government spending on law; order and government spending on economic and community service and budget deficit. The study found that the coefficient for government spending on health was insignificant.

Olaniyan and Lawanson (2010) looked at Nigeria and used the National Health Accounts (NHA) framework to investigate the differences in the Northern and Southern regions patterns of health financial flows, and the implication for health outcomes in the regions. The study was based on the federal structure of governance in the country which has shaped both health financing and delivery in Nigeria with all the three tiers of government involved in health care delivery organization, management and financing. The study found that health care financing in both the North and South of Nigeria is heavily dependent on household and the proportional share by the household is disproportionately against the North because of the higher poverty incidence in the north. With lower health financial flows in the North, the health outcomes in this region remain relatively significantly poor. This raises equity concerns as those who are least able to pay are made to bear the greater burden. The current overburden of the household requires exploration of alternative financing mechanisms by the government. Public facilities are

the main users of the health funds in the country accounting for an average of more than 60% of all funds spent in the health sector. The dominance of the public providers is more prominent in the North, where more than 71% of health services are spent in public facilities, while both the public and private facilities in the South receive approximately equal share of the health spending in the region.

Akram and Khan (2007) carried out a research to measure the incidence of government spending on health in Pakistan at provincial, both rural and urban level; using the primary data of the Pakistan Social Standard Living Measures Survey (PSLM), 2004-05, and by employing the three-step Benefit Incidence Approach (BIA) methodology. The study reviewed the national policies emphasizing health services as well as the trend in access to and public sector spending on health care facilities in Pakistan. The study also explored the inequalities in resource distribution and service provision against the government health expenditures. The rural areas of Pakistan are the more disadvantaged in the provision of the health care facilities. The expenditures in health sectors are overall regressive in rural Pakistan as well as at provincial and regional levels. Mother and Child subhead is regressive in Punjab and General Hospitals and Clinics are regressive in all provinces. They discovered that only the Preventive Measures and health facilities sub-sector is progressive in Pakistan. Public health expenditures are pro-rich in Pakistan.

Scheil-Adlung, et al (2006) conducted a comparative analysis on the impact of social health protection on access to health care, health expenditure and impoverishment for South Africa, Senegal and Kenya using 2003 household survey data. The health insurance coverage is low in these countries with South Africa having 12.3 per cent of population covered, Kenya the coverage is 9.1 per cent and Senegal 4.2 per cent and in all the three countries the lower income group has very few people covered. Applying a multiple logistic regression, the study established that insured households in Senegal are less likely to face catastrophic expenditure i.e. medical expenditure equal to or exceeding 40 per cent of a household's non-subsistence spending; than the uninsured. In South Africa catastrophic expenditure was prevented for the richest quintile while for Kenya there was no significant impact given the national health insurance caters mainly for the formally employed. For all the

three countries, residence in a rural area where most poor people reside increases likelihood of catastrophic expenditure. In Senegal children less than five years are more likely to face catastrophic expenditure while in Kenya that was not the case due free medical services for children under five years. Across the three countries the likelihood of descending into poverty due medical expenditure is between 1.5 per cent and 5.4 per cent of the households. The study also found that health related expenditure widens the poverty gap; in South Africa the poverty gap increased from 37 per cent of the poverty line to 41 per cent; in Kenya it increased from 25 per cent to 27 per cent; and in Senegal it increased from 54 per cent to 64 per cent.

Sinnathambu (2004) examined whether an increase in government expenditure on health has been accompanied by greater equality between the poor and non-poor in Thailand. In the period 1992-2000, real government expenditure grew on average 10 per cent per annum, the number of health services personnel and facilities increased and the rise was far greater than the growth in population or incomes per capita. However, in the distribution of public resources on health the bottom quintile of the population received disproportionately less government spending. The widening inequality between the poor and non-poor could partly be explained by large differences in the mix of health resources used by each province in the country over time and the associated costs involved. These phenomena imply that improving equity in public health care provision needs to be given higher priority in government spending.

In the study to find out changes in income of the poorest quintile as result of per capita income changes, Dollar and Kraay (2002) found that social spending on health and education not to be significantly related to economic growth which is positively related to changes in income of the poorest. Dollar and Kraay noted that social spending on health and education if effective and well-targeted to the poor may increase incomes of the poor despite their findings. The study explained that social spending on health and education in most developing countries, mainly benefit the middle class and the rich. In investigating the relationship between poverty and social spending, health and education are lumped together in most studies.

Methodology

The study is quantitative in nature. The ex-post facto research design was employed. The study employed time series data for the analysis. Data adopted in the study were generated from the Central Bank of Nigeria annual statistical bulletin of various issues and World Bank World Development Indicator.

Model Specification

This section specifies an econometrics model aimed at capturing the relationship between public health expenditure and poverty in Nigeria. The model for this study is anchored on the Keynesians framework which posits that government expenditure (fiscal policy-FP) principally influences income and output growth. That is, an increase in government expenditure will increase output and employment leading to reduction in poverty incidence. Put succinctly, A = f(FP); where A is output growth which in turn will reduce poverty and FP represents government expenditure (fiscal policy variables) - government expenditure on health. However, the model for the study and the apriori, expectations are specified as:

$$POVI_t = \alpha_0 + \alpha_1 GREH_t + \alpha_2 GCEH_t + \alpha_4 EMPR + E_t \quad 1$$

Where: POVI=Poverty Incidence, GREH = Government Recurrent Expenditure on Health, GCEH = Government Capital Expenditure on Health, EMPR= Employment Rate, α_0 = intercept Parameter, E= Error Term, α_1 - α_3 = Slope Parameters.

On the apriori, it is expected that; α_1, α_3 and $\alpha_2 < 0$.

Techniques of Data Analysis

The techniques that were employed to analyze our data are: unit root test via Augmented Dickey Fuller test (ADF) and Autoregressive Distributed Lag (ARDL). The ADF unit root test helps to ascertain stationarity of the variables, and the general form of the ADF is presented thus:

$$\Delta y_t = \alpha_0 + \alpha_1 y_{t-1} + \Sigma\alpha_1 \Delta y_i + \delta_t + U_t \quad 2$$

Where: y is a time series, t is a linear time trend, Δ is the first difference operator, α_0 is a constant, n is the optimum number of lags in the independent variables and U is random error term. In order to examine the short-and long-term relations between the public expenditure on health and poverty in the model, Autoregressive Distributed Lag (ARDL) was used. The reason is that estimates provided by ARDL method avoid problems such as autocorrelation

and endogeneity, they are unbiased and efficient. Moreover, Autoregressive Distributed Lag (ARDL) is a long-established method of estimating co-integrating relationships, such as Engle-Granger (1987) or Johansen's (1991, 1995) method, or single equation methods such as Fully Modified OLS, or Dynamic OLS either require all variables to be I(1), or require prior knowledge and specification of which variables are I(0) and which are I(1). To do away with this problem, Pesaran and Shin (1999) and Smith (2001) showed that co-integrating systems can be estimated as ARDL models, with the advantage that the variables in the co-integrating relationship can be either I(0) or I(1), without needing to pre-specify which are I(0) or I(1). Pesaran and Shin also noted that unlike other methods of estimating co-integrating relationships, the ARDL representation does not require symmetry of lag lengths; each variable can have a different number of lag terms. Therefore, the ARDL model for this study is presented thus:

$$\Delta POVI_{t,j} = C_0 + C_1 POVI_{t-1,j} + C_2 GCEH + C_3 GREH_{t-1,j} + C_4 EMPR_{t-1,j} + \sum_{i=1}^{n1} a_{1i,j} \Delta POVI_{t-1,j} + \sum_{i=0}^{n2} a_{2i,j} \Delta GCEH_{t-1,j} + \sum_{i=0}^{n3} a_{3i,j} \Delta GREH_{t-1,j} + \sum_{i=0}^{n4} a_{4i,j} \Delta EMPR_{t-1,j} + \mu_t \quad 3$$

Results and Discussion

The empirical analysis focused mainly on estimation of the regression model and post estimate tests.

Unit Root Test Result

The test for the stationarity status of all variables in the model to establish their order of integration proceeds the ARDL bounds test, the reason for this is to be sure that the variables are stationary at level 1(0) and first difference 1(1) only but not second difference I(2) so as to avoid spurious regression results. Inferences in the bounds testing procedure through the computed F-statistics for bounds testing are based on the assumption that the variables are level 1(0) or first-difference 1(1) stationary. Therefore, the ADF method was used to test for the stationarity of the variables in the model. See Table 4.1 below.

Table 4.1: Augmented Dickey-Fuller Unit Root Test

Variables	ADF Test Statistic @ Level	ADF Test Critical Value @ 5% (level)	Order of Integration	ADF Test Statistic @ 1st Difference	ADF Test Critical Value @ 5% (1st Diff.)	Order of Integration
EMPR	-0.199828	-2.948404	Not Stationary	-8.074184	-2.951125	1(1)
GCEH	-0.604229	-2.957110	Not Stationary	-3.046488	-2.960411	1(1)
GREH	-3.352094	-1.955681	1(0) stationary	-	-	1(0)
POVI	-5.773296	-3.544284	1(0) stationary	-	-	1(0)

Note: EMPR, GCEH, GREH and POVI as earlier defined
Source: *Authors' Computed Result from (E-views 9.0)*

The stationarity test result presented in Table 4.1 showed that at 5% level of significance, the variables were stationary. For instance, GREH and POVI were stationary at level 1(0), i.e., GREH and POVI were stationary in their levels at 5% ADF test. While EMPR and GCEH were stationary at first differences 1(1). That is, they became stationary at first difference (integrated of order one). Given that the variables were integrated of order 1(0) and 1(1). The requirement to fit in an ARDL model to test for long run relationship is satisfied.

Table 4.2 ARDL Bounds Test for Co-integration

Model		**F-Statistic** = 6.778660
F(POVI, GCEH, GREH EMPR)		K = 3
Critical Values	Lower Bound	Upper Bound
10%	2.01	3.1
5%	2.45	3.63
1%	3.42	4.84

Source: *Authors' Computed Result from (E-views 9.0)*

Since the variables were integrated of order 1(0) and 1(1), and the sample size is small, Narayan (2004) critical values for small sample sizes ranging from 30 observations to 80 observations was adopted. From the ARDL bounds test result, it is clear that there is a long run relationship amongst the variables (POVI, GCEH, GREH and EMPR). This is because the computed F-statistic of about 6.78 is higher than the upper critical bounds at 1%, 5% and 10% critical values. This provided evidence to reject the null hypothesis of no co-integration at 1%, 5% and 10% significance level for the poverty model. It can therefore be concluded from the ARDL bounds test that there is a long-run relationship among the variables. Therefore, this study illustrate that health care expenditure has a long run relationship with poverty incidence in Nigeria. Following the establishment of long-run co-integration relationship among the variables, the long-run and short-run dynamic parameters for the variables were obtained.

Model Estimation Results

Error Correction Test Results

Table 4.3 Estimated ARDL Long Run Coefficients. Dependent Variable: GDP ARDL (3, 0, 0, 0)

Regressors	**Coefficient**	**t-Statistic**	**P-Value**
LOG(GCEH)	0.514055	0.147339	0.8840
LOG(GREH)	6.516756	1.965056	0.0598
EMPR	0.151495	1.515885	0.1412

Source: *Authors' Computed Result from (E-views 9.0)*

The estimated ARDL long run coefficients revealed that government capital expenditure on health has positive but insignificant relationship with poverty in Nigeria. Government recurrent expenditure on health has a positive and significant relationship with poverty. Employment rate has a positive and insignificant relationship with poverty. From the result, it can be deduced that government capital expenditure on health, recurrent expenditure on health and employment rate were wrongly signed (i.e., positive) based on economic theory. This does not conform to the apriori expectations. In addition, only recurrent expenditure on health was statistically significant at conventional level. Meaning that, a good staff welfare system in the health sector will reduce poverty in the long-run.

Table 4.4: Error Correction Representation for the Selected ARDL Model
ARDL(3, 0, O, 0)

Regressors	Coefficients	t-Statistic	P-Value
LOG(GCEH)	0.132322	0.148123	0.8833
LOG(GREH)	1.677465	1.306991	0.2022
EMPR	0.038996	2.148351	0.0408
ECM (-1)	-0.257408	-1.841389	0.0766
R-squared = 0.977850 Adjusted R-squared = 0.973749	Akaike info criterion = 5.074710	Schwarz criterion = 5.346803	Durbin-Watson stat = 1.986165

Source: *Authors' Computed Result from (E-views 9.0)*

Table 4.4 shows the result of the short-run dynamic coefficients associated with the long-run relationships obtained from the ECM equation. The Error Correction Term in the model has the right sign (i.e., negative) though statistically significant at 10%. This indicates adjustment to long-term equilibrium in the dynamic model. Put differently, it indicates it adjustment from short run equilibrium to long-run equilibrium in the dynamic model. This implies that deviations from the short-term poverty rate adjust quickly to long run equilibrium. The Durbin Watson (DW) value of 1.986165 which is approximately 2.0, suggests that the model is free from autocorrelation.

Moreover, the coefficient of government capital expenditure on health in the short- run has the wrong sign (i.e., positive) based on economic theory and statistically not significant at conventional level (i.e., 5%). Meaning that, the null hypothesis was not rejected. Thus, it was concluded that government capital expenditure on health has a positive relationship with poverty but has no significant impact on poverty in Nigeria.

Furthermore, the coefficient of government recurrent expenditure on health in the short- run has the wrong sign (i.e., positive) based on economic theory and statistically not significant at conventional level (i.e., 5%). Meaning that, the null hypothesis was not rejected. Thus, it was concluded that government recurrent expenditure on health has a positive relationship with poverty but has no significant impact on poverty in Nigeria. Meaning that, government capital and recurrent expenditure on health in the short run has not reduced

poverty in Nigeria. This is not far from reality because the health sector has one of the lowest annual budget allocations in Nigeria. However, this result is consistent with the outcome of the studies of Osundina, Ebere and Osundina (2014) that government expenditure on health has insignificant relationship with poverty in Nigeria.

In addition, employment rate in the short- run has the wrong sign (i.e., positive) based on economic theory but statistically significant at conventional level (i.e., 5%). Meaning that, the alternative hypothesis was not rejected. Thus, it was concluded that employment rate has a positive significant impact on poverty in Nigeria.

Post Estimate Tests

Post estimate tests were employed to examine the reliability of the estimated model for prediction or policy purposes. Specifically, Ramsey Reset Test, Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test: Breusch-Pagan-Godfrey and normality tests were applied. The post estimate tests revealed that the ARDL model passed all the diagnostic tests considered. The results of these tests are reported T able 4.5 below.

Table 4.5 Ramsey Test, Serial Correlation LM Test and Heteroskedasticity Test Results

Test	**F-Statistic**	**t-Statistic**	**Obs R-Square**	**Prob. Value**
Ramsey Reset Test	2.443140	1.563055	-	0.1301
Breusch-Godfrey Serial Correlation LM Test	0.595042	-	1.498643	0.5592
Heteroskedasticity Test: Breusch-Pagan-Godfrey	0.769231	-	4.974876	0.6009

Source: *Authors' Computed Result from (E-views 9.0)*

Conclusion and Recommendations

The study on public health expenditure and poverty in Nigeria from 1980-2015 is important to the Nigerian economy, because public expenditure plays an important role in the growth and development process. This work has used data on government capital expenditure on health, government recurrent expenditure on health, employment rate and poverty incidence from CBN Statistical Bulletin and World Bank World Development Indicator and the adoption of the ARDL method of econometrics to capture the short and long-run relationship between endogenous and exogenous variables. The results revealed that government capital and recurrent expenditure on health have positive but insignificant relationship with poverty in Nigeria both in the short run and long run. This finding is consistent with the studies of Osundina, Ebere and Osundina (2014) who disaggregated government spending to see the effect of government health expenditure on poverty in Nigeria using co-integration and VEC methods of econometrics to analyze time series data of 43 years and found expenditure on health to be insignificant to poverty reduction in Nigeria. Employment rate has a positive and insignificant relationship with poverty in the long run. While in the short run, employment rate has a positive and significant relationship with poverty in Nigeria. The study concluded that public health expenditure has not significantly contributed to the reduction of poverty in Nigeria. Therefore, government should increase its health care expenditure in the proportion to the number of people living below poverty line in Nigeria. Momentously, to protect people against poverty, free basic health care services are required. This is because the poor people need to be protected from health shocks.

References

Akram, M. & Khan, F.J. (2007). *Health Care Services and Government Spending in Pakistan Institute of Development Economics* Islamabad Pide Working Papers 2007:32

Asghar, N., Hussain, Z., & Rehman, H.U. (2012). The Impact of Government Spending on Poverty Reduction: Evidence from Pakistan 1972 to 2008. *African Journal of Business Management, 6*(3), 845-853.

Bales, S. (2013). *Impact of Health Shocks on Household Welfare in Vietnam - Estimates Using Fixed Effects Estimation.* Hanoi: IHPM.

Central Bank of Nigeria (2007). Central Bank of Nigeria Statistical Bulletin.

Central Bank of Nigeria (2013). *Annual Economic Report*. 31st December, 2013.

Chambers, R. (1996). Poverty and Livelihood: *Who's Reality Really Count?* A Policy Paper Commissioned by UNDP Nairobi World Submit for Social Development.

Crispin, M. (2013) The Impact of Government Expenditure on Pro Poor Sectors in Reducing Poverty: The Case of Kibaha District: *A Thesis Submitted in Partial Fulfillment of the Requirement for Award of the Degree of Master of Science in Economics (Msc. Eco) of Mzumbe University.*

Dollar, D. & Kraay, A. (2002). *Growth is Good for the Poor.* Washington DC: The World Bank.

Eneji, M. A., Juliana, D. V. & Onabe, B.J. (2013). Health Care Expenditure, Health Status and National Productivity in Nigeria (1999-2012). *Journal of Economics and International Finance,* 5(7), 258-272.

Gbosi, N. G. (2012). *Modern Labour Economics and Policy Analysis* (2nd edition), Pack Publishers, Ebonyi State, Nigeria.

Hull, K. (2009). Understanding the Relationship between Economic Growth, Employment and Poverty Reduction. *Promoting Pro-Poor Growth: Employment*, 69-94.

Ilesanmi, O. S., Adebiyi, A. O., & Fatiregun, A.A. (2017). Contribution of Household Health Care Expenditure to Poverty in Oyo State, South West Nigeria: A Rural and Urban Comparison. *Journal Health Management and Informatics*. 4(3):64-70.

Jung, S. Y.,& Smith, R. (2006). *The Economics of Poverty: Explanatory Theories to Inform Practice.*

Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money*. New York: Harcourt Brace. 113-115.

Lewis, O. La Vida (Panther Books, London, 1968).

Matthew, O. A., Adegboye, F. B. & Fasina, F.F. (2015). Public Health Expenditure and Health Outcomes in Nigeria. *International Journal of Financial Economics,* 4(1), 45-56.

NBS (2010). National Bureau of Statistics Annual Data.

Nguyen, T. T. (2011) Health Care Utilization and Economic Growth of Households in Ba Vi, *Vietnam UMEA University Publication* pp. 1-29.

Obadan, M. I. (1996). *Poverty in Nigeria: Characteristics, Alleviation, Strategies and Programmes.* Ibadan, NCEMA Policy Analysis Series.

Obansa, S. K. J. & Orimisan, A. (2013). Health Care Financing in Nigeria: Prospects and Challenges *Mediterranean Journal of Social Sciences* 4 (1), 221-236.

Odior, E. S. O. (2015). Public Spending on Health, Reduction of Poverty and Millennium Development Goals Achievement in Nigeria: A Computable General Equilibrium Micro Simulation (Cge-Ms) Approach *International Journal of Economics, Commerce and Management United Kingdom* 3(2)1-19.

Okoh, A. S. (2015). Impact of Fiscal Policy on the Growth of Agricultural Sector in Nigeria, 1981-2013. *European Journal of Educational and Development Psychology,* 3(4), 1-17.

Olakunde, B. O. (2012). Public Health Care Financing in Nigeria: Which way Forward? *Annals of Nigerian Medicine* 6(1), PP. 4-10.

Olaniyan, O. & Lawanson, A. (2010). *Health Expenditure and Health Status in Northern and Southern Nigeria:* A Comparative Analysis Using NHA Framework. Paper Presented at the 2010 CSAE Conference Held at St Catherine College, University of Oxford, Oxford, UK.

Osundina, C. K., Ebere, C. & Osundina, O.A. (2014). Disaggregated Government Spending on Infrastructure and Poverty Reduction in Nigeria. *Global Journal of Human-Social Science: (E) Economics* 14(5), 1-8.

Pesaran, M.H. & Shin, Y. (1999). "An Autoregressive Distributed Lag Modelling Approach to Cointegration Analysis." *Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium*, Strom, S. (ed.) Cambridge University Press.

Rashad, A. S. & Sharaf, M.F. (2015). Catastrophic and Impoverishing Effects of Out-of-Pocket Health Expenditure: New Evidence from Egypt *American Journal of Economics* 2015, 5(5): 526-533.

Scheil-Adlung, X., Asfaw, A., Booysen, F., Lamiraud, K., Juetting, J., Xu, K.,Muchiri, S. (2006). *What is the Impact of Social Health Protection on Access to Health Care, Health Expenditure and Impoverishment? A comparative Analysis of three African Countries.* Geneva: WHO.

Sinnathambu, A. (2004). Coping With Poverty in the Health Sector: Evidence from Public Spending in Thailand *Asia-Pacific Development Journal* 11(2) 103-124.

Todaro, M. P. & Smith, S.C. (2011). *Economic Development. Eleventh Edition*. Pearson Education Limited, Edinburg. Grate, Harlaw, England.

Townsend, P. (1979). *Poverty in the United Kingdom* (Penguin, Harmondsworth).

Townsend, P., Corrigan, P. & Kowarzik, .U. (1987). *Poverty and Labour in London* (Low Pay Unit, London).

Udoka, C. O. & Anyingang, R.A. (2015). The Effect of Public Expenditure on the Growth and Development of Nigerian Economy (1980-2012). *International Review of Management and Business Research* 4(3), 823-833.

Umo, J. U. (2012). *Escaping Poverty in Africa. A Perspective on Strategic Agenda for Nigeria.* Millennium Text Publishers Limited 14 Science Road, Unilag Estate, Magodo, Isheri, Lagos, Nigeria.

World Bank (2011). World Development Report. New York: Oxford University Press.

World Health Organization (2013). Statistical Information System. World Health Organization, WHO: Geneva. hppt./www.who.int/whosis/en.

PUBLIC EXPENDITURE BY STATE GOVERNMENTS AND HUMAN CAPITAL DEVELOPMENT IN NIGERIA

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Abstract

The agitation by state governments in Nigeria for an upward review of revenue allocation to them and the low level of human capital created the need to find out how revenue allocated to states in Nigeria have improved human capital development in the country. Using the panel and partial frontier efficiency(PEF) analyses to examine data sourced from the National Bureau of Statistics and the Federal Ministry of Finance over the period 2011 - 2016, the results indicated that: expenditure of the states from the federation account reduced basic school enrolment and spurred infant mortality level. Expenditure from federation account to states was statistically significant in explaining changes in basic school enrolment and infant mortality rate in Nigeria. Expenditure of states via external debts bears a positive sign with basic school enrolment but has negative relationship with infant mortality rate but was not significant in explaining changes in basic school enrolment and infant mortality rate. Expenditure by states from the Value Added Tax , has positive coefficient with basic school enrolment, but negative relationship with infant mortality rate. VAT was also significant in explaining human capital development in Nigeria. Price level was significant in explaining changes in basic school enrolment but was not significant in explaining changes in infant mortality level. The result further revealed that the impact of government expenditure on human capital development vary significantly amongst states of the federation. This implies that some states performed better than others in utilizing revenue from the federation account in achieving human capital development. Based on these findings, the paper suggests: the practice of fiscal federalism in Nigeria, review of modalities for external borrowing by states government and a stable macroeconomic environment as possible ways of enhancing human capital development in Nigeria.

Keywords: Public expenditure, school enrolment, infant mortality, human capital development, external debt and VAT,

Introduction

Public sector expenditure on socio-economic infrastructure plays a crucial role in stimulating economic growth and development and, therefore improve the quality of life of the people. Studies by many scholars have supported the fact that increases in government expenditure on socio-economic and physical infrastructure encourage human capital development and stimulate economic development.

The endogenous growth theory by Arrow (1962) and Romer (1986) recognized the critical role of knowledge and health in the growth process. Unfortunately, most developing countries like Nigeria lack the requisite funds to improve human capital (education and health) at the household level hence the need for government intervention through the public utility approach (Arrow, 1971). Empirical studies by Abu and Abdullahi, (2010); Al-Yousif, (2000); Abdullah, (2000) and Cooray, (2009) have all supported the importance of public spending in enhancing economic growth and development. These studies simply suggest that government expenditure on health and education raises the productivity of labour and increase the growth of national output. Similarly, expenditure on infrastructure such as roads, communications, power, etc, reduces production costs, increases private sector investment and profitability of firms, thus fostering economic growth (Abu N et al 2010).Other scholars like Foster and Henrekson (2001), Ghura (1995) and Barro (1991) argued that government expenditure is characterized by waste hence constitutes an impediment to rapid and sustainable economic growth and development.

Over the years, Nigerian governments at all levels of governance have routinely rolled out annual budgets, some of which proposed multi-billion naira expenditures to achieve economic development. To be specific, large sums have been allocated for expenditure on social services such as the universal basic education and improvement in health care both at the national and states levels. In recent times, especially within the framework of the Millennium Development Goals (MDGs), government and development agencies are becoming more interested in human capital development and are accordingly channeling spending into these areas which directly have positive reward for low income groups (NISER 2005).

According to the World Bank (2015), education expenditure as a percentage of GNI in Nigeria was 0.85 as of 2015. Its highest value over the past 45 years was 5.11 percent in 1981, while its lowest value was 0.85 percent in 1991. The World Bank also reported that health expenditure by the public sector as a percentage of GNI in Nigeria was 0.92 as of 2014 with its highest value over the past 19 years at 1.47 percent in 2007, while its lowest value was 0.60 percent in 1996. To Kupoluyi, (2012), Nigeria spends less than 9 percent of its annual budget on education compared to other African nations with lower population size like; Botswana with 19.0% on education, Swaziland, 24.6%; Lesotho, 17.0%; South Africa, 25.8%; Cote d'Ivoire, 30.0%; Burkina Faso, 16.8%; Ghana, 31%; Kenya, 23.0%; Uganda, 27.0%; Tunisia, 17.0%; and Morocco, 17.7%. This implies that Nigeria spends less in growing her human capital.

Though statistics on public spending on human capital development at the states levels appears scanty, most of the states of the federation tend to ally with the expenditure pattern of the central government hence the disparity in socioeconomic indicators amongst the 36 states of the Nigeria's federation. It is therefore necessary to investigate how expenditure made by the states of the federation has affected human capital development and to determine if the impact of expenditure of states on human capital development differ across the states or not. We continue our investigation by examining related theoretical and empirical literatures on public expenditure, followed by the methodology employed to achieved the objectives, results and discussion and the concluding remarks and recommendations

Literature Review

Education and health needs of the public fall within the public goods purview in most developing economies. This is because of the critical role they play in the development process and the tendency of excluding greater segment of the society from it consumption if left to be produced and managed by the private sector alone. The public goods approach to public expenditure by Arrow (1971), argued that "when the market cannot manage to establish an optimum situation, society will, at least to some extent, become aware of the shortages, and other social institutions, outside the market, will emerge to try to fix them." In order to correct externalities from market failure, it is necessary to

devise institutional mechanisms and policy instruments that include the implications of an agent's action in the decision process. These may take different forms, such as the establishment of a tax or fee equal to the external cost generated or the introduction of emission certificates with commercial value determined by the market.

Public goods are goods that once produced, can be consumed by an additional consumer at no additional cost. This theory posits that government expenditure is determined by the demand for public goods. According to CBN (2013) the market mechanism is not available for their provision because such expenditure is characterized by one or both of non-rivalry and non-excludability for instance roads and national defense. Rivalry is the ability of multiple consumers to consume the same good, while excludability is the ability of producers to defect and prevent non-compensating consumption of their products. Public goods, therefore, get under-produced because they are not excludable. The pricing mechanism tends to fail in the allocation of such goods because it cannot force consumers to reveal their demand for purely non-excludable goods, neither can it force producers to meet that demand.

Although, absolute non-rivalry and non-excludable does not exist in the real world, but economists think that some goods approximate the concept closely enough for the analysis to be economically useful. Thus, public goods usually relate to all goods and services provided by government and included a wide variety of goods and services.

Until recent times, studies on decentralization of public expenditure and economic development were concentrated in the developed economies of America, Europe and Asia. For instance, Zhang and Zou (1998) in their study on liberalization of public expenditure and economic growth in 28 Chinese provinces over the period 1987 – 1993, find a negative and significant relationship between fiscal decentralization and economic growth in China. In a similar study, Jin et al. (1999) however, report a direct and significant relationship between decentralization of expenditure and economic growth in same sample size in Chinese provinces. The results were the same despite the inclusion of a dummy variable by Jin et al study which was not included by the earlier authors.

In Germany, Berthold et al. (2001) using panel data from 1991 - 1998, investigated the impact of equal fiscal allocations among states and additional federal grants on economic development of the 16 Lander (states). Their findings show that, increase grants amongst states and increase fiscal allocations among the tiers of government have serious negative effect on nominal economic growth per capita of the Lander (states). However, in a similar study, Behnisch et al. (2002) find a positive relationship between increase in federal fiscal activities and economic performance in Germany in a study carried out using time series data from 1950 – 1990

Blankenau et al (2007) studied government spending and economic performance in Brazil and find that public expenditure on education stimulates economic growth while revenue from taxes retard economic growth, resulting in an unpredictable net effect. The authors argue that the complexity of the result may be due to the manner in which government funds educational expenditure – imposing tax on income. An increase in educational taxes may hamper growth by reducing aggregate investment. However, increase in educational funding increases quality of education and improves human capital spending and economic growth.

In a related study, Basu and Bhattarai (2009) discover a relatively weak relationship government spending on education and economic growth implying a non-linear U-shaped nexus between government expenditure and economic growth. Usually public expenditure on education spurs a positive effect on economic growth in more developed economies, whereas in less developed economies, public expenditure on education may retard long-term economic growth and development. This implies that countries which have less investment in education and human capital, will experience a crowding out effect of public expenditure on private sector expenditure in education which may outweigh the joint impact, cumulating into low growth of the economy.

In a study on the relationship between level of decentralization and economic performance in Nigeria, Jimoh (2003) applied the Error Correction Mechanism and Granger causality test. The study revealed that increase in the number of local governments and states and subsequent improvement in revenue allocations to them have significant implications on economic

development in Nigeria. Though the author did not conduct any preliminary test on the data used.

Aigbokhan (1999) examines fiscal liberalization on economic performance in Nigeria using Ordinary Least Squares method. His finding revealed a high concentration proportion of fiscalism in Nigeria. The study also finds proofs of mismatch in fiscal roles with states being worse affected. In a related study by, Jimoh (2003) using OLS, he found that more liberalized governance, especially in terms of increased number of local governments and improvement in revenues allocations to lower tiers of government would increase economic performance.

Akinlo (1999) also studied the fiscal responsiveness of State governments to total revenue flows and base on the type of federal government assistance schemes using the OLS technique. The study revealed that state governments' spending was spurred by federal grants during the period of the study. The study further shows that grants to states have direct impact on the expenditure capacity of the state governments. Finally, the study revealed that statutory grants seem to explain most of the impact of federal government funds on state spending capacities during the period of the study.

Castro-Lead et, al, (1999) investigated the effectiveness of social spending of government on education and health care in several African countries and discovered that the programmes did not favour the poor, but those who are better off. The investigation concluded that this concentration problem cannot be resolved simply by adjusting the subsidy programme. They however, maintained that the problems that prevent the poor from taking advantages of these services must also be addressed, if the public expenditures social services are to be effective.

Dehn, et, al (2003) however, posit that public expenditure may fail to translate into desired and expected services for several factors: (i) possibility that the expenditure may be directed at the wrong goods or the wrong people. But even when governments spend on the right goods or the right people, the money may fail to reach the frontline service provider as evidence from expenditure on primary schools in Uganda in the mid-1990s, and (ii) even when the resources reaches the frontline facility, the incentives to provide the service

may be weak – a trait mostly feature of public services that are concerned with inputs rather than outputs.

Dang (2013) investigated the contributions of federal government revenue allocation to the three tiers of government on Nigeria's economic development. using the error correction mechanism and Granger causality test, he found that revenue allocations to federal government has significant impact on economic development while revenue allocation to states has indirect and serious implication on economic development in Nigeria. The study also shows evidence of unidirectional causation between revenue allocations and economic growth in Nigeria.

Rocha and Gilbert (2007) examined the components of public expenditure in Brazilian that affected economic growth over the period 1986 - 2003. The authors discover a significantly positive nexus between public expenditure on defense, education, transport and communications the growth rate of the Brazilian economy. The authors also find capital expenditures and the rate of growth of the economy to be negative

Divino and Silva Jr (2012) carry out a related investigation to Rocha and Gilbert (2007) study on the Brazilian municipalities. They discover from their results that total public expenditure affected economic growth positively in municipalities in the same manner as the average age of schooling and life expectancy at birth. Their finding also revealed that, economic growth was negatively influence by changes in level of income, income inequality and the number of homicides in Brazil. Furthermore, in absolutely poor municipalities, public expenditure on maintenance was discovered to be more growth friendly than spending on capital projects. The outcome of this finding shows that low income areas are primarily concern about increasing economic growth than other macroeconomic goals.

Using a cross-country data, Blejer and Khan (1984), to study public spending and social outcomes, the authors discovered that public spending, infrastructure, urbanization, demographic structure, income in equality, and per capita income had a significant relationship with enrolment rates, poverty reduction and infant mortality reduction.

Gupta et al (1999) carried out a study on 50 transitional and developing countries, using the Ordinary Least Squares approach, their results indicated that higher public spending on primary and secondary education had a positive implication on educational performance. The result of the study also revealed that per capita income, urbanization, environment, and sanitation also have serious implication on basic school enrolment rates and performance of the education sector.

Ogbu and Gallagher (1991) and Anyanwu and Erhijakpor (2007), conducted a study on public expenditure and education performance in African countries using the panel analysis. The result of their study revealed a positive relationship exists between public spending on education and enrolment rates.

In a study on the impact of tax revenue on economic performance in Nigeria, Bukie and Adejumo (2013) used the OLS and found that economic performance variables like; local investment, labour force, FDI and tax revenue are all positively and significantly related to economic growth in Nigeria. Adereti et al. (2011) in another study expanded the scope of his study by analyzing the relationship between revenue from VAT and the growth of the Nigerian economy over the period 1994 to 2008. Utilizing data on GDP, VAT Revenue, aggregate Tax Revenue and aggregate revenue of the central government. Their findings conformed with that of Owolabi and Okwu (2011) which shows a positive and significant relationship between revenue from VAT and economic growth in Nigeria.

In a separate study, Success et al. (2012) analyze the implication of Petroleum Profit Tax on the development of the Nigerian economy over the period 2000 - 2010.Their findings show that petroleum profit tax positively and significantly impacted on economic growth (GDP) in Nigeria. In spite of this result, the authors complained that the huge revenue from Petroleum Profit Tax has not improve the general wellbeing of the people in Nigeria.

Ofoegbu et al (2016) examined the impact of tax revenues on development of the Nigerian economy using HDI as a proxy for performance. Their finding revealed that tax revenue has a significant positive impact on human development index in Nigeria.

Similarly, Okeke (2014), conducted an investigation on public expenditure on health and education on economic development, in Nigeria over the period 1908 – 2010 by employing the Vector Error Correction Mechanism. The result of the study revealed that government expenditure on health significantly reduced infant mortality rate. However, the result of the study also indicated that public spending had no significant effect on total school enrolment level during the period under investigation.

Filmer and Pritchett (1997) study provided a proof which shows that public spending on health is not the major determinant of infant mortality outcomes. According to the authors, the level of income, inequality level, female education, and the degree of ethnolinguistic fractionalization determines to a greater extent the variation in infant mortality across countries. Given this result, the study suggested policies that encourage economic growth, reduce poverty and income inequality, and increase female education in order to reduce the mortality among children.

In another investigation, Ude and Ekesiobi (2014), used panel analysis to study the impact of state government expenditure on social outcomes with greater emphasis on education in the 36 states across Nigeria. Their findings indicated that state spending on education had a significant impact on basic school enrolment rates, secondary enrolment rates and adult literacy in the states that make up Nigeria.

In a related study but with different methodology, Ernest (2014) investigated how Nigeria's policy on government expenditure affects education and poverty reduction in the country using the integrated sequential dynamic computable general equilibrium (CGE) model. The outcome of the study indicated that it will be extremely difficult for Nigeria to eradicate poverty and achieved 100 percent literacy level by the year 2015. The study concluded that increase in investment in human capital will help the country to meet SDGs targets and reduce poverty level and improve literacy in the further.

The review above indicated that several studies have been done on public expenditure and economic growth and development both outside the shore of Nigeria and within. However, the studies consulted in Nigeria do not examine

how expenditure done by the states has affected human capital development in the states of the federation. This study seeks to bridge this gap in scope and also improve on the methodology applied by using both the panel analysis and partial frontier efficiency ranking in its analysis.

Methodology

The analytical foundation for this study is the Barro (1990) which proposes a simple endogenous growth model with the public sector as a major player. In the Barro model, government expenditure goes for public investment(infrastructures, schools, health, sanitation etc.). Public investments, which are financed through income taxes,complement private investments.Since public investments raise the productivity of private investments,higher taxes can increase government revenue, expenditure and raise human capital development (productivity) while a reduction in taxes could stifle government revenue, expenditure and retard human capital development (productivity) and the overall growth of the economy. Barro (1990) added public spending to the Romer's production model (AK) and expressed thus:

$$Y = BK^{1-\beta}G^{\beta} \qquad 1$$

Where: Y = total output; B = average productivity of capital/learning factor, K = aggregate level of capital and G = public spending. Borrowing from the Barro's model, the study specifies a functional relationship between public expenditure and human capital development thus:

$$Y_{it} = f(\text{FRAS}_{it}, SEDT_{it}, VAT_{it}, INF_{it}) \qquad 2$$

Where: Y_{it}= human capital development proxied by basic school enrolment and infant mortality rate in the 36 states of Nigeria, $FRAS_{it}$= revenue allocated to the states from the federation account, $SEDT_{it}$= external debts incurred by the 36 states in Nigeria, VAT_{it}= value added tax revenue shared to the 36 states in Nigeria and INF_{it}= price level in the states. I = cross section/number of states in Nigeria (36) and t = time period covered by the study (2011 – 2016) for the 36 states = 216

Thus equation 2 could be expressed in a non-linear form thus:

$$SSER_{it} = \alpha(\text{FRAS}_{it})^{\alpha_1}(SEDT_{it})^{\alpha_2}(VAT_{it})^{\alpha_3}(INF_{it})^{\alpha_4}e^{u_{it}} \qquad 3$$

$$IFMR_{it} = \alpha(\text{FRAS}_{it})^{\alpha_1}(SEDT_{it})^{\alpha_2}(VAT_{it})^{\alpha_3}(INF_{it})^{\alpha_4}e^{u_{it}} \qquad 4$$

Where SSER = Basic School Enrolment, IFMR = Infant Mortality Rate

In the estimation process some parameters are introduced and a disturbance term "U" to take care of variables that affect human capital development but not included in the models above. Also to estimate the equations 3 and 4 using economic technique of panel analysis (cross sectional and time series data), the equations are transformed into a log -linear form by taking the natural log of the variables as follows:

$$\ln\text{SSER}_{it} = \alpha_0 + \ln\alpha_1\,\text{FRAS}_{it} + \ln\alpha_2 SEDT_{it} + \ln\alpha_3 VAT_{it} + \ln\alpha_4 INF_{it} + U_{it} \qquad 5$$

$$\ln IFMR_{it} = \beta_0 + \ln\beta_1\,\text{FRAS}_{it} + \ln\beta_2 SEDT_{it} + \ln\beta_3 VAT_{it} + \ln\beta_4 INF_{it} + U_{it} \qquad 6$$

Note: Ln = natural logarithm, α and β are parameters and elasticities of the variables. All the variables in equation 5 except inflation rate are expected to be positively related to basic school enrolment while all the variables in equation 6 except inflation rate are expected to be negatively related to infant mortality rate. Data used for this study were sourced from the National Bureau of Statistics and the Federal Ministry of Finance, Abuja and analyzed using the panel and partial efficiency frontier analyses.

Equations 5 and 6 were estimated by pooling the variables together analysed for Fixed effect (FE) and Random effect (RE) after conducting a correlation test and descriptive statistics of data using graphs and charts. FE implies that there is change in the intercept, further implying that there is a difference amongst the states in term of utilizing revenue/expenditure for development, while RE implies that the intercept is constant and further that there is no difference amongst the states in term of utilizing revenue/expenditure for development. FE regression is one of the approaches used to capture specific effects in a panel data model. Cross-sectional FE are to capture/control for factors that may differ across the cross-sectional unit (States), but are invariant over time or change slowly over time (Islam 1995; Baltagi 2001).

The partial efficiency frontier analysis computes and ranks maximum performance measure for each decision making units (DMU) relative to all other DMUs. This study focuses on the efficiency level of the individual expenditure heads – statutory revenue allocated to states from the federation account, expenditure by states via external borrowing, and VAT revenue shared to the states (DMUs) over the period under investigation. The expenditure heads also served as the inputs while human capital development indicators such as: average basic school enrolment and infant mortality rate are output/outcomes. The panel result shows that impact of expenditure by state governments on human capital development varies across the states. Hence to really capture how each state utilized revenue/expenditure to improve human capital development, the partial efficiency frontier analysis was used to rank the performance of each state. Partial efficiency frontier (PEF) analysis ranks performance from a maximum score of one (1) – zero (0). In this study, efficiency score of 1 represents state(s) with higher capacity for using revenue/spending to achieve improve school enrolment while efficiency of 1 represent state(s) with least utilization of revenue/expenditure for reducing infant mortality and vice versa.

Results

Table 1: Descriptive Statistics

Variable	Observation	Mean	Std. Deviation	Minimum	Maximum
IFMR	216	67.21	29.90	15	163
SSER	216	456737.7	442594.2	18280	2474923
VATS	216	9.18	9.59	2.05	73.56
SEDT	216	0.41	0.61	0.03	6.26
FRAS	216	42.10	35.31	15.76	220.74
INF	216	10.65	2.53	8.06	15.3

Source: Author's Computation

The result in Table 1 indicates that there exists significant variation in all the variables under investigation. The wide range of deviation from the mean in infant mortality, basic school enrolment, federal allocation to states and price level indicate that achieving sustainable revenue generation/expenditure and

human capital development in Nigeria were not very sustainable during the period under study due to wide fluctuation in the variables. The wide disparity between the minimum and maximum values also support the unsustainable nature of the Nigeria's revenue/expenditure and human capital indicators.

Trend Analysis

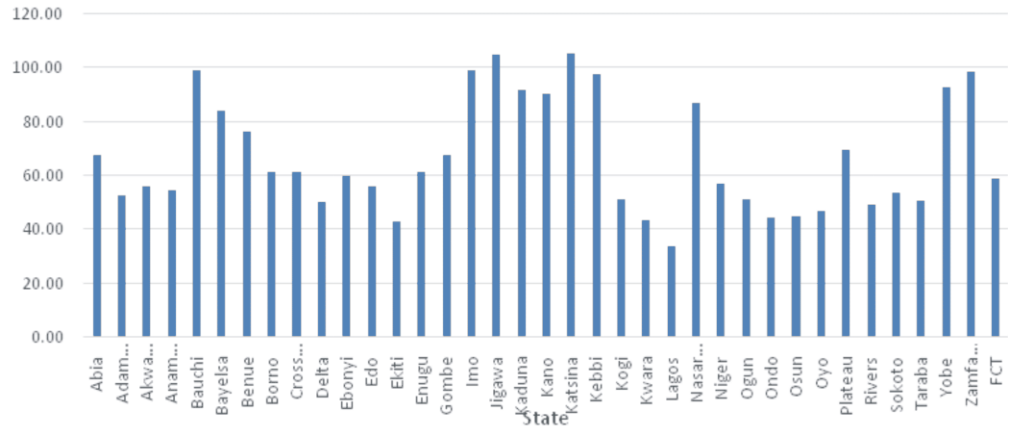


Figure 1: Average Infant Mortality rate in Nigeria by States 2011 - 2016

Information in Figure 2 unveils that infant mortality rate differs amongst the states of the federation. With an average of more than 100 deaths per 1000 births, the Northern states have the highest child mortality. These states are:Katsina and Jigawa, Yobe, Kebbi, Zamfara and Bauchi States. Imo state top the chart in the Southern region, followed by Bayelsa state. The States with the lowest infant mortality rate are Lagos, Ekiti, Ondo and Osun.

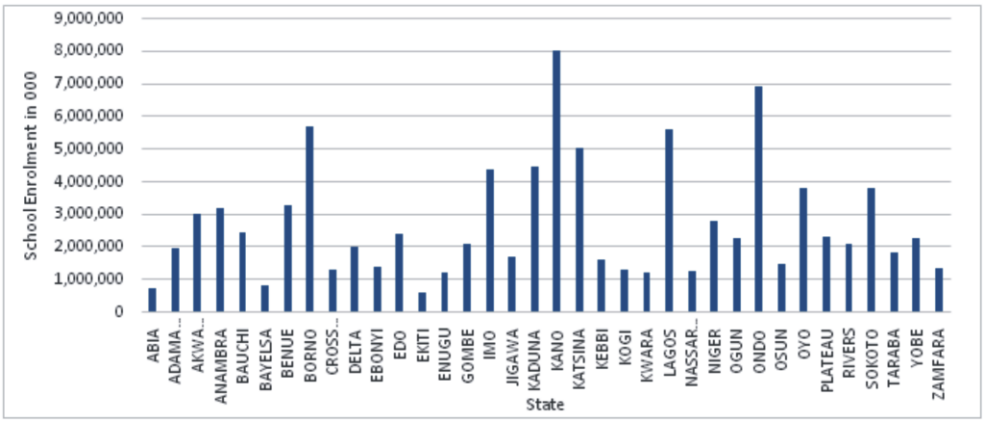


Figure 2: Total Primary School Enrolment in Nigeria by States

The basic school enrolment statistics as reported in Figure 2 discloses that it varies across the states of the federation just like infant mortality rate. With an aggregate basic school enrolment of 8 million, Kano state has the highest basic school enrolment. This is followed by Ondo, Bornu, Lagos and Katsina states. Ekiti state has the least basic school enrolment, accompanied by Abia, Bayelsa, Kwara and Enugu states. The chart further reveals that school enrolment appears high in the northern region. Revenue allocation to states of the federation as shown in Figure 3, suggests that the oil producing states of Akwa-Ibom, Delta, Rivers, Bayelsa have the highest revenue allocation. Ebonyi, Ekiti and Nasarawa states have the least revenue allocation over the period.

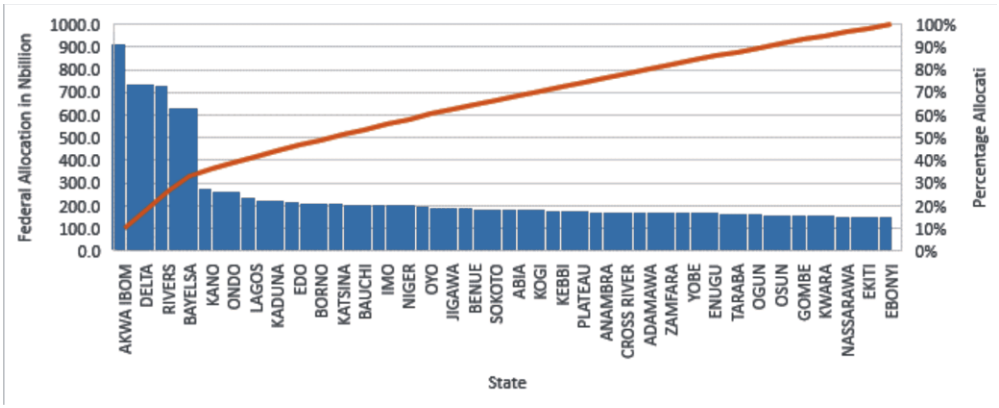


Figure 3: Total Federal Revenue Allocation to States in Nigeria 2011 - 2016

As reported in Figure 4, southern states of Lagos, Cross Rivers and Akwa Ibom states have the highest stock of external debt while northern state of Kaduna also followed states with very high debt profile. The states with very low external debt profile are Taraba, Bornu and Benue States with external debt below N1 billion.

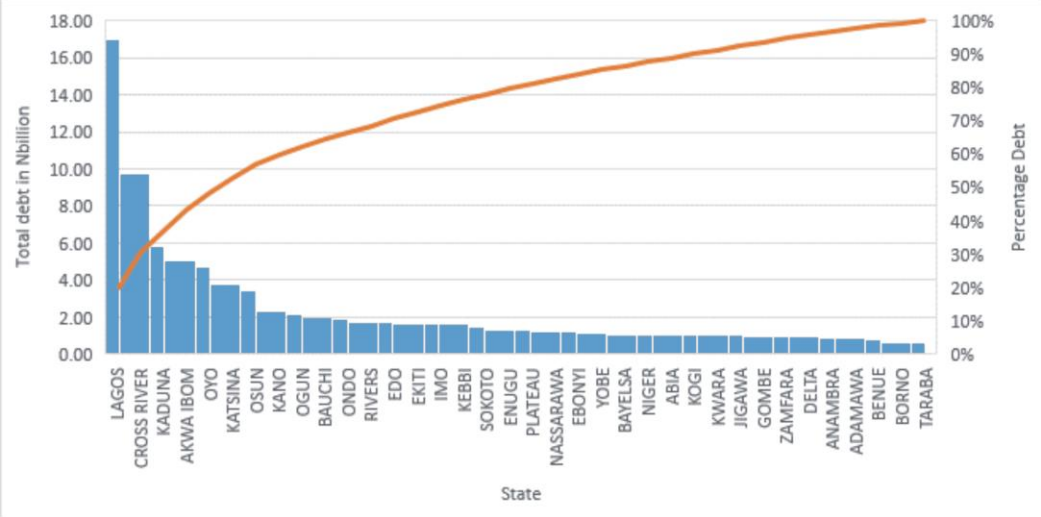


Figure 4: External Debt Incurred by States in Nigeria 2011 - 2016

As shown in Figure 5, the states that got high VATs allocation aside Lagos state are Kano and Rivers. Kwara, Nasarawa and Bayelsa states have the lowest VATs allocation from the federation account allocation.VAT represents the productive and consumption capacities of a state. VAT is collected by the federal government through the Federal Inland Revenue Service (FIRS) and distributed to states of the federation on monthly basis based on amount generated from each state.

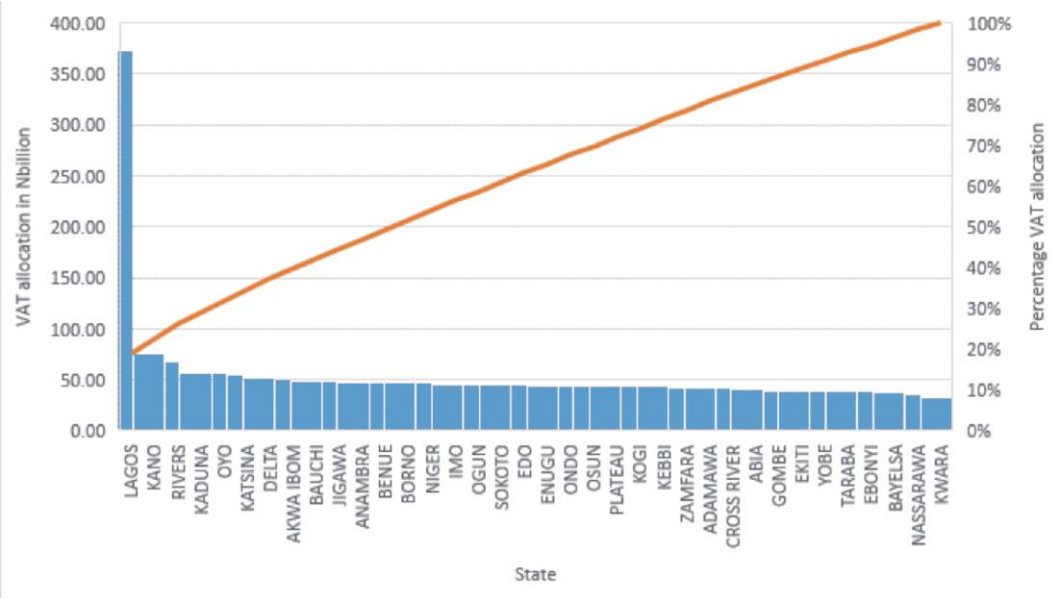


Figure 5: VAT Allocation to States in Nigeria 2011 – 2016

Panel Result

Table 2: Result of Basic School Enrolment Model

Variable	Linear Regression	Random Effect (RE)	Fixed Effect (FE)
Log(FRAS)	-0.29 (0.04)	-0.66 (0.00)	-1.72 (0.00)
Log(SEDT)	0.17 (0.08)	0.30 (0.01)	0.26 (0.14)
Log(VATS)	0.69 (0.00)	0.76 (0.00)	1.41 (0.00)
Log (INF)	-0.16 (0.64)	-0.57 (0.07)	-1.42 (0.00)
Constant	12.75 0.00)	15.06 (0.00)	19.57 (0.00)
R^2	0.15	0.14	0.10
Breusch-	Chi2(1) = 0.03; Prob = 0.86; H_0: Constant variance		

Pagan/Cook-Weisberg test for heteroscedasticity	
Ramsey RESET test	F(3,208) = 5.34; Prob = 0.002; H_0: model has no omitted variable
Hausman Test for Fixed Effect (FE)	Chi2(4) = 25.09; Prob = 0.00; Ho: difference in coefficients not systematic

Source: Author's Computation

The panel result reported in Table 2 revealed that revenue allocation to states bears a negative and has a significant relationship with human capital proxy by basic school enrolment in the linear regression, random and fixed effect models. This implies that revenue allocated to the 36 states of the federation has not improve knowledge/literacy level in Nigeria. This result is not in tandem with economic theory/apriori theoretical expectation. This result conforms with the investigation by Okeke (2014) and Ernest (2014). Their studies all revealed a negative relationship between public expenditure and school enrolment in Nigeria. This result tends to expose the Nigeria's state in term of the achievement of the Sustainable Development Goal (SDG). Nigeria yearly budget to the education sector has consistently fell below the UNDP/UNESCO requirement of earmarking at least 25 percent of total yearly budget to the educational sector.

External debt incurred by the 36 states of the federation is positively related to human capital (basic school enrolment) in the linear regression, random and fixed effects models. This connotes that external debt improves school enrolment and human capital in Nigeria. This result deviated from theoretical economic expectation. The result however shows that only the random effect model was significant at 5 per cent level. This result is in conformity with the study by Okwu et al (2016). They found a positive relationship between public debt and economic development (social outcomes). Ndikumana and Boyce (2004) also found that public debt is like a double-edged sword which can affect development positively or negatively depending on the application of such funds. To the authors, debts channeled towards human capital development and the production of goods for the poor tend to improve

development than those earmarked for the day-to-day running of government businesses.

Value Added Tax (VAT) proceeds to the 36 states of the federation has a positive coefficient with basic school enrolment and was significant at 5 per cent level in the linear regression, random and fixed effects models. This entails that VAT positively and significantly energizes human capital measured by basic school enrolment. This result agrees with the apriori theoretical expectation. This result is also in tandem with earlier studies by Okwu (2011), Success et al (2012) and Ofoegbu et al (2016). These authors in their studies find VAT to be positively related to school enrolment. VAT provides revenue to the three tiers of government, hence such fund if channeled into the educational sector will improve the performance of the sector.

Price level (inflation rate) has a negative coefficient in the linear regression, random and fixed effect models. This connotes that increase in prices level slows down school enrolment. This outcome is in consonance with the theoretical expectation however, only the fixed effect model was significant at 5 per cent level. This result is in consonance with the studies by Krener and Miguel (2007) and Evans, Kremer and Ngatia (2008). An increase in price level raises cost of living especially, food, clothing and books. This may reduce school enrolment and impact the development of a country negatively.

The diagnostic test carried out shows evidence of constant variance as contained in the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity while the Ramsey RESET test shows variable omission. The test for fixed effect conducted using the Hausman procedure indicates that difference in coefficients was systematic. This connotes that the impact of revenue allocation to state, external debt owes by the states, VATs and price level on school enrolment differ amongst the 36 states of the federation.

Table 3. Result of Infant Mortality Rate Model

Variable	Linear Regression	Random Effect (RE)	Fixed Effect (FE)
Log(FRAS)	0.13 (0.03)	0.58 (0.00)	0.98 (0.00)
Log(SEDT)	-0.02 (0.63)	-0.04 (0.38)	0.03 (0.53)
Log(VATS)	-0.30 (0.00)	-0.61 (0.00)	-0.93 (0.00)
Log (INF)	0.64 (0.00)	1.01 (0.00)	1.28 (0.00)
Constant	2.73 (0.00)	0.90 (0.04)	7.40 (0.00)
R^2	0.18	0.13	0.10
Breusch-Pagan/Cook-Weisberg test for heteroscedasticity	Chi2(1) = 0.42; Prob = 0.52; H_0: Constant variance		
Ramsey RESET test	F(3,208) = 2.24; Prob = 0.09; H_0: model has no omitted variable		
Hausman Test for Fixed Effect (FE)	Chi2(4) = 83.30; Prob = 0.00; Ho: difference in coefficients not systematic		

Source: Author's Computation

The result of public spending and human capital development (proxy by infant mortality rate) in Table 3 shows that revenue allocated to states of the federation (expenditure) has significant positive implication on infant mortality rate in the linear regression, random and fixed effects model. This result deviated from the apriori theoretical expectation and entails that increase in revenue allocation (expenditure) to states in Nigeria seriously reduced infant mortality level in Nigeria. This result is in agreement with studies by Or, (2000a,b); Baldacci et al., (2002); Berger and Messer, (2002) who also found a positive relationship between spending on health and health outcomes (infant and maternal mortality rates). Most states of the federation still have very poor health indices like infant and maternal mortality in spite of

huge revenue from the federation account. Statistics from the NBS (2016) indicates that Katsina, Jigawa states have the worst health indicator (infant mortality rate) with 100 deaths per 1000 births while Lagos, Ekiti, Ondo and Osun states have the best health indicator (infant mortality level) in Nigeria over the period 2011 – 2016.

External debt stock of states government in Nigeria bears negative sign in the linear regression and random effect model. This deviated to the apriori theoretical expectation and connotes that increase in foreign debt reduced infant mortality hence promoted human capital development in Nigeria. However, the positive sign of the coefficient of debt in the fixed effect model shows that rising debt increase infant mortality level and retarded human capital development in Nigeria. The negative coefficient of external debt agrees with our apriori theoretical expectation and aligned with the findings of Gupta, Verhoeven and Tiongson (1999) who found that health expenditure reduces childhood mortality rates. However, investigation by Musgrove (1996) traced infant mortality to the level of education by mothers, cultural factors among others.

Value Added Tax (VAT) relationship with infant mortality rate is negative and substantial in explaining changes in infant mortality level in the linear regression, random and fixed effects models. This result is in tandem with the apriori theoretical expectation and entails that increase in VAT allocation to the 36 states of the federation reduced infant mortality rate significantly. This result is in tandem with the findings of Bhejer and Khan (1984) and Okeke (2014). They found a negative relationship between government spending and infant mortality rate. Also Robalino et al (2002) found that higher fiscal decentralization led to improved health outcomes (lower mortality rates), particularly in environments with strong political rights and high levels of ethno-linguistic fractionalization. An increase in revenue allocation to the various tiers of government and their expenditure could improve medical care through the training of more medical personnel, construction of more bed space and procurement of additional medical facilities and drugs for both the pregnant mothers, the infants and the general public.

Inflation rate also conforms to the apriori theoretical expectation by bearing a positive coefficient in the linear regression, random and fixed effect models.

This connotes that increase in price level substantially worsen infant mortality hence reduce economic prosperity in 36 states in Nigeria.

The diagnostic test conducted using the Ramsey RESET test display evidence of no variable omission in the infant mortality model. TheHausman test for fixed effect indicates that difference in coefficients was substantial. This entails that the consequence of revenue allocation to state, external debt owes by the states, VATs and price level on economic prosperity (infant mortality rate) differ amongst the 36 states of the federation.

Table 4.6: Partial Efficiency Frontier (PEF) Analysis Result

S/N	State	Average Efficiency Score for SSER	Average Efficiency Score for IFMR
1	Abia	0.95	0.95
2	Adamawa	0.98	0.96
3	AkwaIbom	0.89	0.88
4	Anambra	0.98	0.96
5	Bauchi	0.96	0.93
6	Bayelsa	0.92	0.93
7	Benue	0.97	0.94
8	Bornu	1.00	0.93
9	Cross River	0.95	0.95
10	Delta	0.89	0.88
11	Ebonyi	0.98	0.97
12	Edo	0.96	0.93
13	Ekiti	0.98	0.97
14	Enugu	0.96	0.95
15	Gombe	0.98	0.96
16	Imo	0.96	0.94
17	Jigawa	0.95	0.96
18	Kaduna	0.95	0.92
19	Kano	0.93	0.90
20	Katsina	0.95	0.93
21	Kebbi	0.96	0.96

22	Kogi	0.97	0.94
23	Kwara	0.98	0.97
24	Lagos	0.93	0.86
25	Nassarawa	0.98	0.98
26	Niger	0.98	0.94
27	Ogun	0.96	0.96
28	Ondo	0.96	0.91
29	Osun	0.96	0.96
30	Oyo	0.95	0.91
31	Plateau	0.98	0.94
32	Rivers	0.85	0.85
33	Sokoto	0.97	0.94
34	Taraba	0.98	0.96
35	Yobe	0.97	0.96
36	Zamfara	0.97	0.97

Source: Researcher's Computation (Stata 13)

The PEF results indicate that Borno state has the highest efficiency score of 1.0 in primary school enrolment over the period under investigation. This was followed by Anambra, Ekiti, Gombe, Kwara, Nassarawa, Niger, Plateau and Taraba states with efficiency score of 0.98. This implies that Bornu state and the later states have utilized revenues from the federation account to achieved very high primary school enrolment compared to other states of the federation. Rivers state has the lowest efficiency score in primary school enrolment with a score of 0.85. This implies that Rivers did not use her revenue from the federation account to achieved less school enrolment.

The efficiency score for infant mortality rate indicates that Nasarawa has the worst utilization of revenue to reduce infant mortality rate with and efficiency score of 0.98. This is followed by Ebonyi, Ekiti, Kwara and Zamfara States with efficiency score of 0.97. Rivers, Lagos and Delta states were more efficient in the use of revenue to reduce the incidence of infant mortality in their state with efficiency scores of 0.85, 0.86 and 0.88 respectively.

Findings

The results indicated that statutory revenue allocated to the states does not conformed with theoretical expectation with negative relationship with school enrolment and positive nexus with infant mortality rate. However, it was significant in explaining changes in human capital development in Nigeria. VAT was significant in explaining changes in human capital development and also conformed with aprioriexpectation with positive relationship with school enrolment and negative nexus with infant mortality. External debt expenditure was not significant in explaining changes in human capital development but complied with aprioriexpectation with positive nexus with school enrolment and negative relationship with infant mortality. Price level was significant in explaining changes in infant mortality rate and also conformed with apriori expectation by bearing positive sign with infant mortality and negative sign with school enrolment. It was however significant in the FE model for school enrolment.

The significance of the fixed effect test in both infant mortality and school enrolment models indicate that the impact of revenue/expenditure on human capital development differ substantially across the 36 states of the federation. This implies that some states were more efficient in the utilization of funds allocated to them to improve human capital (increase school enrolment and reduce child mortality) than others. Specifically, Bornu, Anambra, Ekiti and Gombe were more efficient in utilizing revenue allocation for primary school enrolment. Bornu and Gombe states were among the highest beneficiaries of the 'Amagiri' school programme executed by the former President Goodluck Jonathan's administration during the period under study. This programme increased the number of schools in the northern state and also provided food for school children which help to improve and sustain primary school enrolment and reduce out of school children. Anambra state witnessed very rapid socio-economic transformation during the administration of Peter Obi. His policy on education and agriculture helped to improved school enrolment and reduced poverty in the state. The case of Ekiti is similar to Anambra state. Rivers state has a neglected basic primary school education with dearth of basic infrastructure and low teachers-pupil ratio until 2014 when the administration of Chibuike Amaechi employed 13,000 teachers in the state.

The long years of neglect may have explained the poor performance of Rivers state.

Rivers, Lagos and Delta states were most efficient in reducing infant mortality rate with funds from the federation account. These states have very high revenue allocation from the federation account and also have very high internal revenue generation capacity. The three states have very good primary health care structure and facilities that helped promote efficient health care delivery and reduced mortality rate amongst children and their mothers over the period. The over 500 primary health care facilities built by the Rivers state government during the administration of Chibuike Amaechi helped pregnant mothers to access medical care. Also the continuous immunization of children below the age of 5 had also assisted. Lagos state has more improve medical care due to its almost 100 percent urban nature and the consistent policy administration in the state from the administration of Bola Tinubu to that of Ambode. The presence of medical doctors as Governors in Delta state over the past 11 years have help to improve medical care in Delta state as most of their policies tend to follow improvement in the health sector.

Nasarawa, Ebonyi, Ekiti, Kwara and Zamfara were not efficient in using federal allocation to improve medical care. These state received very low from the federation account. They also have very low revenue generation capacities due to their rural nature (see figures 4 & 6). Apart from Kwara state with seemingly consistent policy administration (Saraki and Ahmed), Nasarawa, Ebonyi and Ekiti have witnessed very discontinuous policy administration in governance.

Concluding Remarks and Recommendations

The results of our study demonstrate that revenue allocation and VAT revenue disbursed to states of the federation were significant in explaining changes in school enrolment and infant mortality level while external debt was insignificant in explaining changes in school enrolment and infant mortality (human capital development) in Nigeria. Based on these results, the study concludes that; revenue capacity of the state is a serious factor in explaining the human capital development status of the states of the federation. This is because states with higher revenue allocation from the federation account and

higher VAT generation capacity achieved higher human capital development than those with low revenue allocation and tax revenue generation capacity. Also states with low revenue but with consistent policy framework and administration achieved higher human capital development (Anambra, Ondo and Osun) than those with unstable policy framework and administrative capacity like Sokoto and Zamfara. The study thereby recommends: the practice of true fiscal federalism, fiscal discipline of public office holders and a stable macroeconomic environment as possible ways of enhancing human capital development in Nigeria.

References

Abdullah, H. A., (2000). The Relationship Between Government Expenditure and Economic Growth in Saudi Arabia. *Journal of Administrative Science* 12(2), 173-191.

Abu, N. & Abdullah, U. (2010). Government Expenditure and Economic Growth in Nigeria, 1970–2008: A Disaggregated Analysis. *Business and Economic Journal, Vol. 4.* Retrieved on11/6/2010 from http://astonjournals.com/bej

.Aigbokhan B. (1999). Fiscal Federalism and Economic Growth in Nigeria, at the 1999 *NES Selected Paper Presented Annual Conference.*

Al-Yousif, Y, (2000). Does Government Expenditure Inhibit or Promote Economic Growth: Some Empirical Evidence from Saudi Arabia. *Indian Economic Journal, 48(2).*

Akinlo, A.E. (1999). A Cross-Sectional Analysis of the Expenditure Responsiveness of States to Federal Allocations During Civilian Era in Nigeria- *A Paper Presented at the 1999 Annual Conference of Nigerian Economic Society.*

Anyanwu, J., & Erhijakpor, A.E. (2007). Education Expenditures and School Enrolment in Africa: illustrations from Nigeria and other SANE Countries. *Working Paper 92 (No. 227). Retrieved from African Development Bank*

Adereti, S.A., Adesina, J.A & Sanni, M.A (2011). Value Added Tax and Economic Growth of Nigeria. European Journal of Humanities and Social Sciences, 10(1): 555-571.

Arrow, K J (1971), *Essays in the Theory of Risk-Bearing*, Chicago: Markham; Amsterdam and London: North-Holland.

Arrow, K. J (1962). Learning by doing. *The Review of Economic Studies*, 29(3), pp. 155-173.

Barro, R. J. (1991). Economic Growth in a Cross-Section of Countries, *Quarterly Journal of*

Economics. (106) 407-43

Basu, P & Bhattarai, K. (1999). Does Government Spending on Education Promote Growth and Schooling Returns? *Durham University and Hull University Working Paper*, p. 1-22.

Bukie, H.O. & Adejumo, T. (2013). The Effect of Tax Revenue on Economic Growth in Nigeria. International Journal of Humanities and Social Invention, 2(6): 16 – 26.

Behnisch, A., T. Büttner & Stegarescu, D. (2002). Public Sector Centralization and Productivity Growth: Reviewing the German Experience, *ZEW Discussion Paper No. 02-03, Mannheim.*

Berthold, N., Drews, S & Thode, E. (2001). Die föderale Ordnung in Deutschland – Motor oder Bremse des wirtschaftlichen Wachstums? *Discussion Paper No. 42, University of Wurzburg 2001.*

Berger, M. C. & Messer, J. (2002). Public financing of health expenditures, Insurance, and Health Outcomes. Journal of Applied Economics, 34, (17), 2105 – 2113.

Blejer, M. I., & Khan,M.S. (1984). Government Policy and Private Investment in Developing Countries. *IMF Staff Papers, 31(2), 379 -403.*

Blankenau, W. F.; Simpson, N. B, & Tomljanovich, M. (2007). Public Education Expenditures, Taxation, and Growth: linking Data to Theory. *American Economic Review*, v. 2, n. 97, p. 393-397.

Castro-Lead, F.; Dayton, J.; Demery, L. & Mehra, K. (1999). Public Social Spending in Africa: Do the Poor Benefit? *World Bank Research Observer 14 (1): 49-72*.

Cooray A, (2009). Government Expenditure, Governance and Economic Growth. *Comparative Economic Studies, 51(3): 401-418.*

Dang, D.Y (2013). Revenue Allocation and Economic Development in Nigeria: An Empirical Study. *SAGE Open July-September 2013: 1 –7*

Den, J., Reinikka, R & Svesnsson, J. (2003). Survey tools for assessing performance in service delivery in F. Bourguignon and L. A. Pereira da Silva (Eds.) *The impact of Economic Policies on Poverty and Income Distribution: Evaluation Techniques and Tools*, New York: The World Bank and Oxford University Press, pp. 191-209

Divino, José A.; Da Silva, J.R & Rogério, L.S. (2012) Composição dos Gastospúblicos e Crescimentoeconômico dos municípiosbrasileiros. *RevistaEconomia*, v. 13, n. 3, p. 507-528

Ernest, S. O. O. (2014). Government Expenditure on Education and Poverty Reduction Implications for Achieving the MDGs in Nigeria a Computable General Equilibrium Micro Simulation Analysis. *Asian Economic and Financial review, 2014, 4(2): 150 - 172.*

Filmer, Deon & Lant Pritchett (1997). Child Mortality and Public Spending on Health: How Much Does Money Matter? *World Bank Policy Research Working Paper No. 1864*

Ghura, D. (1995) Macro Policies, External Forces, and Economic Growth in Sub-Saharan Africa. *Economic Development and Cultural Change* 43(4): 759-78.

Gupta, S., Verhoeven, M., & Tiongson, E.R. (2002). The Effectiveness of Government Spending on Education and Health Care in Developing and Transition Economies. *European Journal of Political Economy, 18 (4), 717 - 737*

Gupta, S, Verhoeven M & Tiongson, E. (1999). Does Higher Government Spending Buy Better Results in Education and Health Care? *IMF, Washington D.C, Working paper 99/21.*

Foster, S., & Henrekson, M. (2001). Growth Effects of Government Expenditure and Taxation in Rich Countries. *European Economic Review, 1501-1520.*

Jimoh, A. (2003) Fiscal Federalism: The Nigerian Experience. Paper Presented at the Ad-Hoc Expert Group Meeting - *Economic Commission for Africa, UNCC, Addis Ababa, Ethiopia. October 7 – 9*

Jin, H., Qian, Y.,& Weingast, B.R. (1999). Regional Decentralization and Fiscal Incentives: Federalism, Chinese style. *Stanford University Working Paper, SWP-99-013.*

Kupoluyi, A. (2013), 2013 Budget: Rescuing Education, Vanguard Newspaper, November 26, 2012, www.vanguardngr.com

Ndikumana, L & Boyce, J.K. (2003). Africa's Revolving Door: External Borrowing and Capital Flight in Sub-Saharan Africa. In Padayachee, V (2010). *The political Economy of Africa (eds)*. Routledge Publishers, London

Okeke, B.C. (2014). Impact of Public Sector Spending on Health and Education Outcomes in Nigeria. M.Sc Thesis, University of Nsukka, Nigeria,

Olofin, S.O, Olubusoye, O.E, Bell, A.K, Salisu, A.A & Olalekan, A.S. (2012). Fiscal Federalism in Nigeria: A Cluster Analysis of Revenue Allocation to States and Local Government Areas, 1999 – 2008.CBN Journal of Applied Statistics Vol. 3 No.1 81

Ofoegbu, G.N, Akwu, D.O & Oliver,O. (2016). Empirical Analysis of Effect of Tax Revenue on Economic Development of Nigeria. *International*

Journal of Asian Social Science ISSN(e): 2224-4441/ISSN(p): 2226-5139

Ogbu, O. M., & Gallagher, M. (1991). Public Expenditures and Health Care in Africa. *Journal of Social Science and Medicine, 34(6), 615 - 624.*

Or, Z. (2000a). Exploring the Effects of Health Care on Mortality Across OECD countries. Labour Market and Social Policy Occasional- Papers No. 46, Paris, *Organization for Economic Cooperation and Development.*

Or, Z. (2000b). Determinants of Health Outcomes in Industrialized Countries: A Pooled, Cross-Country, Time-series Analysis. *OECD Economic Studies: No. 30, 2000/1, Paris, Organization for Economic Cooperation and Development.*

Owolabi, S.A. & Okwu, A.T. (2011). Empirical Evaluation of Contribution of Value Added Tax to Development of Lagos State Economy. *Middle Eastern Finance and Economics, 1(9): 24 –34.*

Rocha, F; & Giuberti, A.C. (2007) Composição do gastopúblico e crescimentoeconômico: umaavaliaçãomacroeconômica da qualidade dos gastos dos estadosbrasileiros. *Economia Aplicada*, v. 11, n. 4, p. 463-485.

Romer, P. M. (1986): Increasing returns and long run growth. *Journal of Political Economy*, 94, 1002–37.

Ude, D., & Ekesiobi, S. (2014). Panel Investigation of States Social Spending and Social Outcome: Perspective of Education in Nigeria. *International Journal of Economics, Finance and Management 3(5), 244–255*

World Bank (2001). *Tanzania at the turn of the century: From reform to sustained growth and poverty reduction*. World Bank country study, Washington DC: The World Bank.

Zhang, T. & Zou, H. (1998). Fiscal Decentralization, Public Spending, and Economic Growth, Journal of Public Economics 67, 221 –240.

SOCIAL INFRASTRUCTURE AND INFANT MORTALITY IN NIGERIA

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Abstract

Given the prevalence of preventable infant mortality in Nigeria and its attendant consequences on future human capital development, this paper examines the relationship between social infrastructure and infant mortality in Nigeria from 1980 to 2017. The data for the study were collected from World Bank and World Health Organization data bank. The Johansen cointegration and error correction mechanism were adopted. Augmented Dickey Fuller (ADF) test was used in testing the stationarity of the variables and the test result shows that they are all integrated at order one. The Johansen cointegration result buttressed the existence of long-run relationship among the variables. The Granger causality test result show that unidirectional causality exist between female secondary school enrolment (FSE) and infant mortality (IMR). The same is applicable to female tertiary institution enrolment (FRT) and infant mortality. The parsimonious result established that a negative relationship exist between social infrastructure and infant mortality. Thus, the paper recommends increase female education enrolment.
Keywords: *Social Infrastructure and Infant Mortality.*

Introduction

A reduction in infant and child mortality by two-thirds from 1990 to 2015 is the fourth cardinal goal in the Millennium Development Goals (MDGs) (UNICEF, 2006). The rate of infant mortality in developing countries is relatively higher than that of the developed countries such as, United State of America, Canada and France . In sub-Saharan Africa one in every eight children die before reaching their first birthday. This is fourteen times higher than the risk for children in the developed countries (World fact book, 2018). The high incidence of infant mortality rate in sub-Saharan Africa is alarming

and mind boggling because it portrays a bad omen for future human capital development in the region. UNICEF (2010) pointed out that, 8.1 million children that died in the world in 2009 before their fifth birthday were in developing countries and that they died from diseases that were preventable.

Infant mortality rate is one of the key indicators that defines the health status and quality of life of any given country. Given the high rate of preventable infant mortality in Nigeria, in October 2008, the Nigerian Government's National Health Insurance Scheme (NHIS) was launched in October 2008 (Bello & Joseph, 2014 & Bako, 2017). The policy thrust of the programme is reducing maternal and child mortality in the country. Despite the huge resources committed to this programme, Nigeria still has the third highest infant mortality rate in the world (WHO, 2017). About 10 percent of infant mortality in the world in 2017 occurred in Nigeria. UNICEF (2017) report documented that five countries accounted for half of infant mortality in the world in 2017 and Nigeria is third on the list. These countries in their descending order were India (24 percent), Pakistan (10 percent), Nigeria (9 percent), the Democratic Republic of Congo (4 percent) and Egypt (3 percent). Nigeria infant mortality rate stood at 67 deaths per 1,000 live births in 2018 (Geobase. Gazetter-Niger, 2018). This rate of 67 deaths per 1000 live births is far above the 30 deaths per 1000 live births which is globally accepted in the millennium development goals as at 2015 (Federal Republic of Nigeria, 2010). There are also differences in infant mortality rate between urban and rural areas in Nigeria and even within the six geopolitical zones in the country. Infant mortality rate in rural areas of Nigeria is about 86 deaths per 1000 live births and 60 deaths per 1000 live births in the urban areas (Nigerian Demographic and Health Survey, 2013). Within the six geopolitical zones, North-West has the highest level of infant mortality; 89 deaths per 1000 live births. This is followed by South-East with 82 deaths per 1000 live births, North-East with 77 deaths per 1000 live births, North-Central with 66 deaths per 1000 live births, South –West with 61 deaths per 1000 live births and South-South with 56 deaths per 1000 live births (Nigerian Demographic and Health Survey, 2013). The differences in infant mortality and to align with the infrastructure provisioning; The urban areas tend to have lower infant

mortality because the higher level of social infrastructure the regions with better infrastructure seem to have less deaths. Thus this study seems to empirically examine this analysis.
The high incidence of infant mortality in the country is an indication of the poor quality of life of our people and poor social infrastructure.

Previous studies have reported maternal education as key determinant of infant mortality (Caldwell, 1979, Behuiya& Streatfield, 1991, Boehmer & Wilhamson, 1996 and Adetunji, 1995). Some other studies examined the role of social infrastructure (education and health) expenditures (Ahmed & Hasan, 2016, Bokhari, Gai & Goltret, 2007, Edeme, Emecheta & Omeje, 2017, Rajkumar & Swaroop, 2008). Others pointed to the role of breastfeeding (Adlukha & Suchindran, 1985) and income inequality (Rodgers, 1979). No previous study known to the researchers have examined access to social infrastructure and infant mortality in Nigeria. Thus, this paper tends to fill the gap in previous studies by examining access to social infrastructure and infant mortality in Nigeria.
The rest of the paper is organised as follows:

Theoretical Framework

The Mosley and Chen Framework

Mosley and Chen (1984) based their framework of child survival on the assumption that social-economic factors of child mortality operate via a common set of transitional factors. They categorized proximate determinants of child mortality into five categories, which are maternal factors, environmental quality, nutrient deficiency, injury and personal illness control.

Maternal Factors: This has to do with age parity and birth spacing – each of these factors affect infant mortality indirectly by affecting maternal health.

Environmental Quality: This dwells on hygienic factors such as good drinking water and sanitary conditions. Environmental contamination transmits infectious disease to mothers and children and this has negative consequences on infant mortality.

Nutrient deficiency (calories, protein and micro nutrient deficiency): Nutrient deficiency affect the probability of child survival, it also affects the mothers wellbeing. Deficiencies in nutrient during pregnancy and lactation affect the new born infant negatively and result in poor quality of mother's breast milk which affects the nutrient intake of the infant

Injury: This may be physical, burn and poisoning injury. Injury has profuse effect on infant mortality especially at the early stage of birth if adequate care is not taken.

Personal illness control (immunization, malaria prophylaxis, bed net etc): This illness control encompasses both the traditional and modern preventive measures aim at preventing disease during pregnancy and after child births and the quality of the preventive measure is very vital.

The socio-economic determinant of infant and child mortality is grouped into two household and community level variables (Mosley & Chen, 1984).The individual household level variables comprise of individual fathers' and mothers' skills, health and time. Father and mother skills have implication for child survival and this skill is proxy by the educational attainment of the couple. Maternal education enhances child survival by influencing women decision on care seeking, nutrition status and morbidity. Paternal education defines the household income in most cases and the quality of decision taking. However, the maternal education attainment is the key determinant of child survival. This is a result of the strong tie between mothers and child during pregnancy and breast feeding. Maternal education level influences her choice of husband, health, reproductive health behaviour, nutritional status and child care practices (Mosley & Chen, 1984).

Mother's time is another important factor in child survival, time for food preparation, healthcare, bathing of the child, washing clothes and house cleaning. Part of the mother's time is also dedicated to economic activities, especially income generating activities that enhance child survival through health care. They concluded that mother's time depends on the household economic situation and this help to influence infant mortality through the proximate determinants (Mosley & Chen, 1984).

The next individual level variables in the socioeconomic milieu are traditional norms and attitudes. The key determinant in this group is power relation within the household which have strong affinity to social norms and value system. Mostly in traditional society women are saddled with the responsibility of childcare. This power relation affects fertility and the reproductive choice of the women because she has no control over her body. This heinous traditional practice has a negative influence on child survival. The same is applicable to cultural difference between the society and region (Mosley & Chen, 1984).

Community level factors dwell on ecological setting (climate, soil, rainfall, attitude and seasonality): These variables impinge on child survival especially in the rural setting. They influence income generating activities, use of medical facilities and the time apportion to child care. From the political economy angle (political institution, infrastructure and health service are essential determinants of child survival (Mosley & Chen, 1984).

Gender Stratification Theory

Proponents of gender stratification theory posit that it is necessary to draw a dividing line between measures of women's absolute status (such as female secondary school enrolment rate) and measures of women's relative status (such as ratio of female to male secondary school enrolment rate). The relative status of women, the status women hold in comparison to men, is at the bed rock of gender stratification theory (Mason, 1986, Boehmer & Williamson, 1996). Women status and autonomy can be grouped into four dimensions; (1) women's educational status (educational attainment) (2) women's political status (degree of political participation), (3) women's economic status (degree of involvement informal paid job) and (4) women's autonomy throughout their life cycle (degree of decision making in the family). But in this study we consider only women's education status, the justification for this that education is a component of social infrastructure. Again previous studies (Caldwell, 1979, Adetunji, 1995, etc) have established that women education is a key determinant of infant mortality. Caldwell (1993) pointed out three reasons for the link between women's education status and child survival: (1)

with mother high educational attainment there is tendency for changes in family roles giving mother greater say with respect to childcare (2) A highly educated mother tends to be less fatalistic about her sick child. She is more prone to seek medical treatment and more prone to make use of modern medical facilities (3) A highly educated mother is in a better position to demand the attention of health providers and more likely to ask for explanations as to the cause of the illness and how to prevent it.

Empirical Literature

Alves and Belluzzo (2005) analysed infant mortality trends and differentials in Brazil during a forty year period. They used panel regression and their findings established that increase educational attainment and per capita growth are key determinants of infant mortality.

Opera (2015) in his paper women education: importance for reduced infant/child mortality rate and national development in Nigeria. His finding established that women education is a veritable medium for reducing infant and child mortality in Nigeria.

Ghilguber, Bernhardt, Diderichsen and Bustro (2003) examined inequalities in child mortality in Mozambique: Differentials by parental socio-economic position. Their results showed that limited infrastructure or extreme hardship may hinder more educated women to use their capital to improve the health of their children.

Meroyi (2018) in his paper titled determinants of health investment in Nigeria: A case of infant mortality in Nigeria. The result indicated that per capita income and maternal education have significant impact on infant mortality in Nigeria.

Ayenigbara and Olorunmaye (2012) examined the causes of infant mortality in Akoko South West Local Government Area of Ondo State. Their results indicated frequent pregnancies, age of the expectant mother, poor nutrition; poverty and lack of adequate medical care gave raise to infant mortality in the local government.

Nwafo, Ebiriekwe and Onwuliri (2015) investigated the risk factors associated with infant mortality in Owerri metropolis, Imo State in Nigeria. Their findings established that Human Immunodeficiency Virus (HIV) infection, malnutrition, alcohol consumption, mother's education attainment, previous caesarean section, antenatal and post-natal factors contribute to infant mortality.

Akinlo and Sulola (2018) investigated health care expenditure and infant mortality in sub-Saharan Africa. Their results showed that government health expenditure has positive effect on infant mortality and under-five mortality. The results further showed that per capita gross domestic product, health aid, HIV prevalence and immunization have inverse and significant relationship with infant mortality and under-five mortality.

Anyanwu and Erhijakpor (2007) examined the relationship between health expenditures and health outcomes in Africa. They used a sample of 47 countries in Africa, infant mortality and under-five mortality as proxy for health outcomes. Their results indicated that health expenditures contribute to health outcomes for sub-Saharan Africa. But the reverse is the case for North-Africa where a positive relationship exist between health expenditures and health outcomes because of the prevalence of HIV and ethno-linguistics fractionalization but a higher patient – physician ratio and female literacy has a negative and significant relationship with health outcomes.

Boachire and Ramu (2015) investigated the effect of public health expenditure on health status in Ghana. Their findings established that health expenditure affect infant mortality negatively. Thus, they concluded that health expenditure brought about reduction in infant mortality.

Barenberg, Basu and Soylu (2015) undertook a study, the impact of public health expenditure on infant mortality in India. The results of the study showed that public health expenditure dampens infant mortality. The base line specification indicates that an increase in public health expenditure by one per

cent of state – level GDP result to eight per cent reduction in infant mortality. The study also established that female literacy and degree of urbanization also reduced infant mortality rate.

Issa and Ouattara (2005) examined the effect of private and public health expenditures on infant mortality rates: does the level of development matters? Using panel data of 160 countries, their findings showed that health expenditure has a negative impact on infant mortality rates.

Method of Study

This study covers a period of 38 years from 1980 to 2017. The justification for this period is that it covers both the military and civilian regimes in Nigeria. The data for this study are annual time series data. Augmented Dickey Fuller test (ADF) is used to test for the stationarity of the variables, while the Johansencointegration is used to test the long run relationship and the error correction mechanism estimate the model. The Granger Causality test is used to test for the direction of causality. The data for the study were generated from World Bank, World Health Organization and National Bureau of Statistics several issues.

Model Specification

An eclectic approach involving Gender stratification theory and Mosley and Chen framework is adopted in this study. Gender stratification theory posits that women intellectual inferiority was a product of their inferior education and this was man-made (Felix, 2017). Women subordination was as a result of gender norms, rather than their biological sex (Felix, 2016 and Parpart, Connelly & Barriteau, 2000). Gender stratification theory advocated equal opportunities for both men and women in education and before the law. The relevance of this theory to this study is in its contention that women subordination, lack of access to education, health and poverty are products of gender relations in our patriarch society and these have serious implication for infant mortality: Thus, the social infrastructure and infant mortality equation is stated thus:

IMR = *f [FPE, FSE, FRT, IMZ, NMW, PPR, PCE]* - *4.1*

Where:

IMR	=	Infant mortality rate to capture infant mortality	capture
FPE	=	Female enrolment rate in primary school	access to
FSE	=	Female secondary school enrolment	
FRT	=	Female enrolment rate in tertiary institutions	
IMZ	=	Number of children immunized	capture access
NMW	=	Nurse/midwives	to health
PPR	=	Patient's Physician ratio or doctor density	
PCE	=	Per capita electricity consumption]	control variable

Note: FPE, FSE, FRT, IMZ, NMW, PPR are proxies measuring access to social infrastructure.

Equation 4.1 is transform into an econometric equation to ease of empirical verification.

$IMR = b_0+b_1FPE+b_2FSE+b_3FRT+b_4IMZ+b_5NMW+b_6PPR+b_7PCE+\mu$ -- *4.2*

Result Presentation and Discussion

The results of the data analysed are presented in the following order: The unit root (stationarity test) result, Johansen Cointegration test result, Lag criteria test result, the Granger Causality result and the error correction mechanism result.

Unit Root Test

Table 5.1: Unit Root Test Result

Variables	**Level**	**1st Difference**	**Order of Integration**
IMR	0.298227	-3.865071	1(1)
FPE	-0.611397	-4.487561	1(1)
FRT	-0.589881	-5.977523	1(1)
FSE	0.489047	-6.409444	1(1)
IMZ	-2.584257	-8.102604	1(1)
NMW	-0.0011792	-7.658287	1(1)
PPR	-0.379020	-6.184658	1(1)
PCE	-0.963734	-8.563077	1(1)

Source: Author Computation Using E-View 10.

Note: ADF criterion value at 5 per cent level of significance = -2.945842. The unit root test is at 5 per cent level of significance.

Given the result in table 5.1 above the Augmented Dickey Fuller (ADF) test shows that the entire variables are integrated of order one 1(1). Given that the entire variables are integrated of order, justifies the adoption of the Johansen Cointegration test to test for the existence of cointegration or long-run relationship among the variables.

The Johansen Cointegration Test

Table 5.2: Johansen Cointegration Result

Trend assumption: No deterministic trend
Series: IMR FPE FRT FSE IMZ NMW PCE PPR
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.940116	277.8694	143.6691	0.0000
At most 1 *	0.802074	176.5168	111.7805	0.0000
At most 2 *	0.678599	118.2018	83.93712	0.0000
At most 3 *	0.622623	77.33946	60.06141	0.0009
At most 4 *	0.451067	42.25707	40.17493	0.0304
At most 5	0.357920	20.66504	24.27596	0.1335
At most 6	0.119409	4.715501	12.32090	0.6078
At most 7	0.003817	0.137667	4.129906	0.7595

Trace test indicates 5 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.940116	101.3526	48.87720	0.0000
At most 1 *	0.802074	58.31503	42.77219	0.0005
At most 2 *	0.678599	40.86232	36.63019	0.0151
At most 3 *	0.622623	35.08239	30.43961	0.0123
At most 4	0.451067	21.59203	24.15921	0.1072
At most 5	0.357920	15.94954	17.79730	0.0928
At most 6	0.119409	4.577834	11.22480	0.5388
At most 7	0.003817	0.137667	4.129906	0.7595

Max-eigenvalue test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The Johansen Cointegration result shown in table 5.2 above indicates there is long-run relationship among the variables. This is justified by the trace and maximum eigenvalue test statistics that indicate the existence of 5 and 4 cointegrating equations respectively. The next step is to ascertain if there existsgranger causality.

Granger Causality Test

Tables 5.3: Granger Causality Test Result

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FPE does not Granger Cause IMR	36	2.08299	0.0859
IMR does not Granger Cause FPE		2.80290	0.0760
FRT does not Granger Cause IMR	36	7.13012	0.0028
IMR does not Granger Cause FRT		1.76638	0.1877
FSE does not Granger Cause IMR	36	5.29806	0.0047
IMR does not Granger Cause FSE		2.61364	0.0893

IMZ does not Granger Cause IMR	36	0.10014	0.9050
IMR does not Granger Cause IMZ		0.98356	0.3853
NMW does not Granger Cause IMR	36	5.72593	0.0017
IMR does not Granger Cause NMW		0.64630	0.5309
PCE does not Granger Cause IMR	36	5.83259	0.0071
IMR does not Granger Cause PCE		7.19339	0.0027
PPR does not Granger Cause IMR	36	5.69632	0.0060
IMR does not Granger Cause PPR		7.47068	0.0022

The Granger Causality test result is shown in table 5.3 above. The result shows that there is a unidirectional causality from female access to tertiary institutions to infant mortality. This implies that female access to tertiary institution (FRT) granger cause infant mortality. Female access to secondary education (FSE) also granger causes infant mortality. Availability of Nurses/Midwives (NMW) at place of birth granger cause infant mortality. Patient physician ratio or doctor density granger cause infant mortality. However, it is bidirectional causality. There is also bidirectional causality between the control variable (PCE) and infant mortality.

Error Correction Mechanism Test

Table 5.4: Parsimonious Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.329931	0.793938	-0.415563	0.6822
D(FSE(-1))	-0.455070	0.185887	-2.448103	0.0237
D(FSE(-2))	-0.380832	0.211256	-1.802704	0.0865
D(FRT)	-0.637815	30.61760	1.841364	0.0805
D(FRT(-1))	-1.053975	28.11977	3.219790	0.0043
D(FRT(-2))	-3.390532	22.56876	3.502312	0.0086
D(IMZ(-1))	0.050785	0.059026	0.860377	0.3998
D(IMZ(-2))	0.044877	0.053383	0.840657	0.4105
D(NMW(-1))	-3.178755	14.58543	-2.179404	0.0414

D(NMW(-2))	-8.456420	17.45547	-0.484457	0.6333
D(PCE(-1))	0.052058	0.040678	1.279768	0.2153
D(PCE(-2))	0.031557	0.042036	0.750718	0.4616
D(PPR(-1))	-6.170578	19.35172	-3.188645	0.0046
D(PPR(-2))	-4.486036	16.47313	-2.723244	0.0131
ECM(-1)	-0.405544	0.156204	2.596251	0.0173

R-squared	0.637855	Mean dependent var	-3.112286
Adjusted R-squared	0.474353	S.D. dependent var	2.535313
S.E. of regression	1.989286	Akaike info criterion	4.510956
Sum squared resid	79.14521	Schwarz criterion	5.177534
Log likelihood	-63.94173	Hannan-Quinn criterion.	4.741059
F-statistic	2.516178	Durbin-Watson stat	2.1 04722
Prob(F-statistic)	0.029242		

Table 5.4 reports the final parsimonious result that emanate from the over parameterised result. The result indicates that the error correction term (-0.405544) has the correct sign (negative) and it is significant at 5 per cent level of significance given its probability value of 0.017. The error correction term also shows the speed of adjustment which indicates how the departure from the long-run equilibrium between infant mortality and its determinants are corrected on yearly basis. 41 per cent departure from the long run equilibrium is corrected in one year.The explanatory variables explained about 47 per cent variation in the dependent variable as shown by the coefficient of the adjusted R-squared.

Female secondary school enrolment (FSE) at lag period one has a negative coefficient (-0.45) and it is statistically significant. This implies a percentage increase in female secondary school enrolment will reduce infant mortality by 0.45 per cent. Female tertiary institution enrolment (FRT) at period one and two have negative coefficient (-1.05 and -3.39) and both are statistical significant at 5 per cent level of significance. The implication is that a one per

cent increase in female tertiary institutions enrolment at lag period one will result to 1.05 per cent reduction in infant mortality. A percentage increase also in female tertiary institutions enrolment at lag period two will bring about 3.39 per cent reduction in infant mortality. This shows that education empowers women to take decision that affect them and their children and also provide them with formal job that enable them to pay the user fee charge in hospital. The reason is that women educational attainment helps them to married well to do husband that enhance their financial status. Female primary school enrolment (FPE) is dropped from the final estimated equation, because its coefficient is insignificant in all the experimental runs.

Immunization has positive coefficient but it is not significant. The availability of nurses and midwives (NMW) has a negative coefficient (-3.17) at lag period one and it is statistically significant. This implies that a one per cent increase in the availability of nurses and midwives at place of birth will reduce infant mortality by 3.17 per cent. The reason for this is that nurses and midwives have the requisite skill in child delivery.

Patient-Physician ratio (PPR) has negative coefficient at lag period one and two and there coefficients (-6.17 and -4.48) are statistically significant at 5 per cent level of significance. This buttress that increasing patients-physician ratio by one per cent will reduce infant mortality by 6.17 per cent in lag period one and 4.48 per cent in lag period two. This implies that the availability of medical doctor at the place of birth and after birth will help to reduce the incidence of infant mortality because danger signals can easily be identified and adequate treatment given to avert it.

Per capita electricity consumption (PCE) has positive coefficients at lag period 1 and 2 but it is not significance.

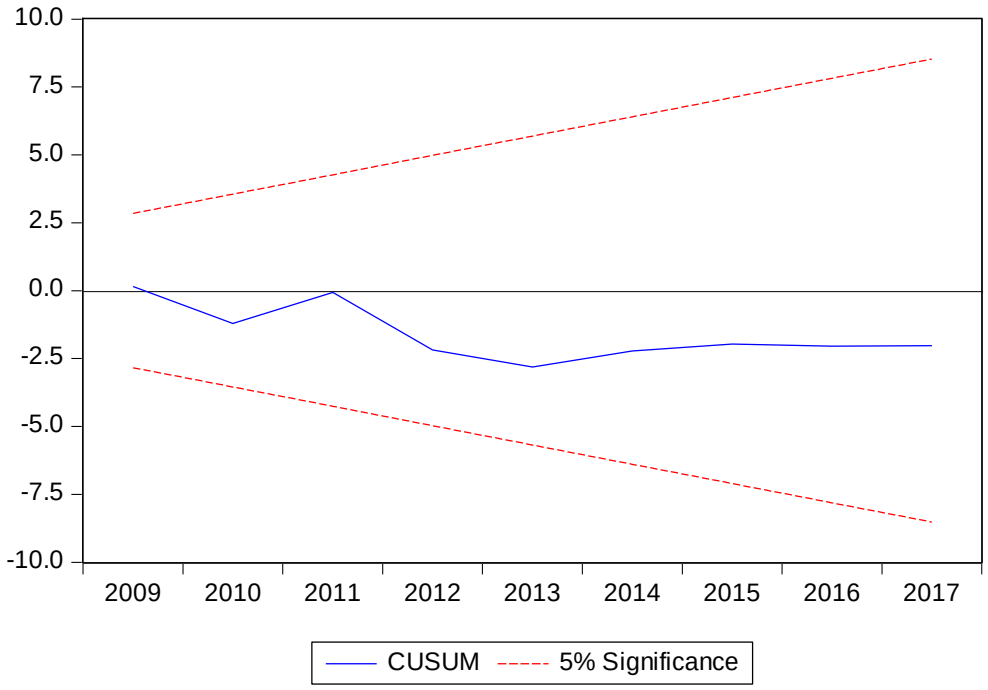
Diagnostic Test

Table 5.5: Diagnostic Test Results

Serial correlation LM test	F(2,18)1.915758	0.6707
Hetroskedasticity	F(14,20) 0.552432	0.8706
Normality test	0.228074	0.892225

The diagnostic test (sensitivity test) results show that the model specified above has the desired econometric properties. There is the absence of serial correlation, the variables are homoscedastic and they are normally distributed.

Stability Test



The stability test is performed using the cusum graph and the result buttress that the model is stable. This is because the graph falls within the two critical bounds.

Conclusion

The objective of this paper is to examine the relationship between social infrastructure and infant mortality in Nigeria. The variables for the study were subjected to econometric analysis and the following inference drawn: social infrastructure (proxy by FSE, FRT, NMW and PPR) is inversely related to infant mortality. Thus access to social infrastructure brings about reduction in infant mortality.

Recommendations

Based on the inference arrived at in this paper, the following recommendations were put forward:

(i) Female education should be encouraged through the award of scholarships.

(ii) Incentives should be given to nurses, midwives and medical doctors as to limit the rate of brain drain in the country.

(iii) Scholarships should be given to medical students and that of allied disciplines.

References

Adetunji, J.A. (1995). Infant Mortality and Mother's Education in Ondo State, Nigeria. *Social Science and Medicine;* 40(2):225-263.

Adlakha, A.L. & Suchindran, C.M. (1985). Factors Affecting Infant and Child Mortality. *Journal of Biosocial Science,* 17:481-496.

Ahmed, R. & Hasan, J. (2016). Public Health Expenditure, Governance and Health Outcomes in Malaysia. *Journal of Ekonomi Malasia,* 50(1): 29-40.

Akinlo, A.E. & Sulola, A.O. (2018). Health Care Expenditure and Infant Mortality in Sub-Saharan Africa. *Journal of policy modeling,* https://doi.org/10.1010//.jpolmid 2018. 09.001.

Anyanwu, J.C. & Erhijakpor, A.E.O. (2007). Health Expenditure and Health Outcomes in Africa. *Economic Research.*

Ayenigbara, G.O. & Olorunmaye, V.B. (2012). Investigating the Causes of Infant Mortality in Aloko South-West Local Government Areas of Ondo State, Nigeria. *Scientific and Academic Publishing,* 2(6): 180-184.

Bako, A.R. (2017). Analysis of Infant and Child Mortality Trends and Differentials in Kaduna State, Nigeria. An Unpublished PhD Thesis, Ahmadu Bello University, Zaria.

Barenberg, A. Basu, D. & Soylu,C. (2015). The Effect of Public Health Expenditure on Infant Mortality: Evidence from a panel of Indian States, 1983-84-2011-12. *Economic Department Working Paper Series*, 199.

Bello, R.A. & Joseph, A.I. (2014). Determinants of Child Mortality in Oyo State, Nigeria. *An International Multidisciplinary Journal of Ethiopia,* 8(32):252-272.

Bhuiya, A. & Streatfield, K. (1991). Mother's Education and Survival of Female Children in a Rural Areas of Banglades. *Population studies, 45:253-264.*

Boachie, M.K. & K, Ramu. (2015). Public Health Expenditure and Health Status in Ghana. *Munich Personal Respell Archive (MRPA) Paper* (66371). https://mpra.ub.uni-muenchen.de/66371/.

Boehmer, U. & Williamson, J.B. (1996). The Impact of Women's Status on Infant Mortality Rate: A Cross-National Analysis. *Social Indicators Research,* **37( ):333-360.**

Caldwell, J.C. (1979). Education as a Factor in Mortality Decline: An Examination of Nigerian Data. *Population Studies,* 33(3):395-413.

Caldwell, J.C. (1993). Health Transition: The Cultural Social, and Behavioural Determinants of Health in the third world. *Social Science & Medicine,* 3(6): 125-135.

Edeme, R.K., Emecheta, C. & M.O, Omeje. (2017). Public health expenditure and health outcomes in Nigeria. *America Journal of Biomedical and Life Sciences,* 5(5): 96-102.

Federal Republic of Nigeria (2010c). Achieving Measurable Result For Health Through National Strategic Health Development Plan, 2010-2015. *Country Compact Between The Federal Government Of Nigeria And Development Partners.*

Felix, J.M. (2017). Social Infrastructure, Maternal Mortality and Economic Growth in Nigeria. An Unpublished PhD Thesis, University of Calabar, Calabar.

Issa, H. & Duattara, B. (2005). The Effect of Private And Public Health Expenditure on Infant Mortality Rates: Does the Level of Development Matters? Economics Department, University of Wales Swansea, United Kingdom.

Meroyi, Y. (2008). Determinants of Health Investment in Nigeria. A Case of Infant Mortality (2000-2014). *International Journal of Academic Research in Business and Social Sciences,* 8(9): 935-949.

Mosley, W.H. & Chen, L.S. (1984). An Analytical Framework for the Study of Child Survival in Developing Countries.

National Population Commission (2014). Nigeria Demographic and Health Survey, 2013.

Opera, I.E. (2015). Women Education: Importance for Reduced Infant/Child Mortality Rate and National Development. *Open Science Journal of Education,* 3(6): 66-72.

Rajkumar, A.S. & Swaroop, V. (2008). Public Spending and Outcomes: Does Governance Matter? *Journal of Development Economics,* 8(6):96-111.

Rodgers, G.B. (1979). Income and Inequality as Determinants of Mortality. *An International Cross-Section Analysis Population Studies,* 33, 343-351.

UNICEF (2006). Annual Report Covering 1st January through December 2007.

UNICEF (2010). Pneumonia and Diarrhoria: Tackling the Deadliest Diseases for the World's Poorest Children and *Statistics and Monitoring Section – Division of Policy and Strategy, UNICEF,* New York.

UNIVERSITY ADVANCEMENT CENTRE AND THE DEVELOPMENT OF NIGERIAN UNIVERSITIES: LESSONS FROM UNIVERSITY OF PORT HARCOURT, PORT HARCOURT, NIGERIA

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Abstract
Nigerian Universities are grossly underfunded. But the underfunding is a worldwide phenomenon. In the face of this underfunding the US universities have maintained their top ranking in the world. One major secret of these universities' performance is their ability to raise funds from alternative sources through the University Advancement centers. This paper presents and discusses the functions of various aspects of university advancement and shows how it can reposition a university to start tapping from the large pool of fund existing both within the country and internationally. The experience of University of Port Harcourt was used to demonstrate this. The paper concludes by urging every Nigerian University to adopt the University Advancement Profession. By so doing the universities will start and continue to raise funds for their development plans. This will improve their infrastructure and lead to the production of quality human capacity and research outputs needed by the economy for economic advancement. Above all is a hidden positive externality to the entire economy of this alternative. The advancement profession helps to redistribute income from the rich to poor without attracting their negative attention and also channel excess resources away from frivolities to more desirable societal ends.

Keywords: University of Port Harcourt, Advancement Centre, Development, Nigeria

Introduction

To maximize the benefits of development, it is said that human resources must not be imported. This point has already been established in the works of development scientists like Meier (1984: 610 - 612), Nnoli (1993: 232), Akpakpan (1994:153) and Tudun Wada in The Proceedings of the Conference on Human Resources Development and Utilisation Policy organized by

Administrative Staff College of Nigeria (ASCON) in 1992. Sophisticated indigenous human capital has become more important especially now in the era of globalization, when capitalists are penetrating every nook and any of the world economy investing and repatriating their profit. To be able to participate profitably in such an economy we need properly educated work force, scientists and technologists, (The South Commission 1990: 274 - 279) and (South Centre 1998: 12), in the report of the Ad Hoc Panel of Economists of the Non-Aligned Movement (Presented to the Twelfth NAM Summit) at Durban, South Africa. Moreover, it is the view of development scientists that development is about improving the life of individuals and the process of developing individuals involves building their capabilities to the point of being able to make adequate use of the resources around them. This underscores the importance of education to development. El-Rufai supported this view, in the 22nd Convocation Lecture of the University of Port Harcourt, held in March 9, 2006 when he said that tertiary institutions, by their nature, play a very significant role as drivers and catalyst of socio-economic development. More positive comments on the importance and effect of education to development were made by Graham-Brown (1991: 303), Hirst and Peters (1991:57), Fusarrelli (1999:97),Adam in Eliott (1991:154), Marshal in Schultz (1993:23), Hadenius (1992:78 - 79), Eugene (1961: 232), Dewey in Dunstan (1992: 2 - 4), Harrison (1990: 316), Bratton & Gold (1999: 274 - 276), McConnell & Bruce (1992: 82 - 84), Baum & Tolbert (1985:119 - 121), Betrand in Jack (1998: 134), Nkovadu (2000:6), Marshall (1920: 212) and Bernett (1990:107 — 109). Again it is said that for development to be complete, we must work for the development of the whole human beings and for that of all peoples, (Cleveland, Gronbacher, Quinlivan, &Therrien 2001). The idea here is that the chances of development of a nation will be greatly enhanced the greater the number of men and women with quality education. Also Nwigwe, (2004) in his paper on An Idea of a University" presented in a Lunch—Time Meeting of the University Advancement Centre of University of Port Harcourt butressed the same point. This explains why, beginning from 3000 BC in Mesopotamia and Egypt to the present epoch in China and India, according to Fagerlind and Saha (1989: 55), informed societies and enlightened individuals world-over spare no effort and resources in search of quality education. And all those who took education seriously have always found advancement of their economy, (Eugene 1961: 229), Balogun in (Yahaya and Akinyele 1992: 215) and (Jack

1998: 135). Today it is not just education but university education that makes more sense. This is because it is at this level of education that the drivers of the economy are produced. Emovon E.U in his "National Research Policies and Sustainable Development" in Adeniyi (1999:38 —42) showed how backward Nigeria is in the production of high capacity manpower (Post Graduates) as compared with the advanced countries — USA, Japan and South Korea.

Apart from the introduction, the study is divided into four sections. The second presents a brief analysis of the performance of the Nigerian university education. That is followed by related theoretical issues and the advancement gap. The fifth discusses the various aspects of the University Advancement Centre. The next is a presentation on how the advancement centre can facilitate the development of the Nigerian universities. That is followed by the achievements of the University of Port Harcourt Advancement Centre (University of Port Harcourt Foundation). The paper ends with the lessons from University of Port Harcourt and concluding remarks

A Brief Analysis of the Performance of the Nigerian University Education

How have we fared in the advancement of this invaluable tool of development? Up to the early 1980s Nigerian universities were well funded and equipped hence they produced good quality graduates that competed favourably with their counterparts elsewhere. But beginning to the late 1980s the universities were under-funded. Tudun-Wada in ASCON (1992:236) has it that most often the shortfall between the amount required by the universities, and that approved by the government often went as high as 30 – 40%. Hence, the Universities could no longer procure new teaching and research equipment, and consumàbIes. The universities are today either under-equipped and lacking infrastructure or having obsolete equipment and poorly maintained infrastructure.

The Honourable Minister for education, Obiageli Ezekwesili, in her speech on October 28, 2006 pointed out, among other woes of the Nigerian university education, that there are 35 Nigerian professors in University of Washington D C, US alone. God knows how many are in other Universities in other universities in US and the world. This shows the extent of brain drain and

underdevelopment of our Universities, a situation that has culminated in the production of half baked graduates that scarcely fit into any job position - a serious case of development contradiction (Ogunde 2008). The Minister predicted that by 2020, when Nigeria is expected to emerge as an economic giant, we will be producing miscreants, misdirected and agitated Nigerians that will negate and obliterate the effort of the minority that are properly trained in the business of developing the economy, if the poor funding trend is not reversed. And the Vice Chancellor of the University of Nigeria Nsukka, Nebo (2008) quoted a Federal Ministry of Education report that said in 2007 that over 81% of graduates of Nigerian universities and other higher institutions in the last six years were jobless and described the situation as a security risk. The Minister and the Vice Chancellor were only expressing the obvious considering the recent youth violence in the usually peaceful Niger Delta.

According to Ighedo (1999), it is a globally acknowledged fact that the quality of education is closely connected to the calibre of the available teaching staff. It is also a fact that the caliber of the teaching, and even non-teaching staff, is a function of the quality of training they acquired from the educational institutions they must have passed through. The quality of training they must have acquired is in turn a function of the available academic infrastructure and quality of staff of the institution. This shows that we can only develop high quality graduates that have the capacity to produce the needed goods and services if we have well equipped universities and properly trained staff. Unfortunately such universities may not be found in Nigeria today. What made this point so glaring is that out of the 73 Nigerian universities, none was rated among the best 1000 universities in the world as at 2005 (Daily Independent on-line 2006). It therefore dawns on us that we may not have access to quality education and therefore may never build the kind of capacity needed for development and may never get close to the national vision expressed in the NEEDS document except some drastic action is taken to break the trend.

The universities need to be urgently upgraded by providing the necessary academic infrastructure and training and retraining of the staff. All these require adequate funding as Latapi said in a publication by UNESCO (1982:

159) -that only the-best financed universities will be capable of developing a significant scientific and technological capacity. And William H Gate, the father of Bill Gate, said in his speech during the October 15, 2005 Come Together Washington Programme of University of Washington, Seattle, WA, for the university to continue to act as a crucible for the ground breaking research and a source for economic development, we must raise more funds". Again Tidjani-Serpos, the Assistant Director General of UNESCO in an inaugural public lecture at University of Benin in 27 April 2006, said that with bleak economic outlook and misplacement of priorities in many African countries, it is very unlikely that public financing to the universities will increase significantly in the foreseeable future. In our case, we have a democracy that is yet at its infant stage and therefore cannot be relied upon for producing the right leadership that has the mind-set for adequate funding of the universities. Even at the time of an academic, President Goodluck Ebele Jonathan, as the president of Nigeria the funding situation to the universities did not change.

This is where we find ourselves in the struggle for the development of Nigerian universities as a means of developing the economy. History has shown that the government cannot be relied upon in the struggle for adequate funding to the universities. It is the position of this work that while the advocacy for increased government funding to the universities is on, the universities themselves should learn, adopt and adapt what universities in other parts of the world, particularly the US (where we have the best universities in the world) and South Africa (where the best African universities are found), did and are still doing to advance and sustain their institutions as a means of developing the required human capacity for the development of the economy.

What the universities in these two countries are doing is encapsulated in what is today called, in the professional parlance, Institutional Advancement or Development. Those who have been specially trained in the business of developing the University and are still practicing in the field are referred to as Advancement Professionals or Development Officers while the field itself is

the University Advancement or Development Profession as its often called in notable Universities like University of Washington, Seattle WA, US.

An analysis of the Nigerian universities' problems reveals inadequate funding as their major root cause. Research has shown that the funding inadequacies are not restricted to Nigeria alone, but it is rather a worldwide phenomenon. In fact, apart from the socialist countries, no country has been able to fund their universities adequately. As at 2005 University of Washington, Seattle, WA, USA receives just 17% of its annual budget from the government. The remaining 83% was raised by the university. This gives an insight into the level of underfunding in the US. Yet in the face of these difficulties we still discovered that 40 of the universities that made the list of the best 1000 universities in the world are from the US alone and three African universities that made the list were from South Africa. This did not happen by accident. The Advancement profession is most strongly rooted in the world in US and most strongly rooted in Africa in South Africa.

In 2002 the MacArthur Foundation based in Chicago came to Nigeria to partner with four Nigerian University namely Ahmadu Bello University, Zaria, Bayero University, Kano, University of Ibadan, Ibadan, and the University of Port Harcourt, Port Harcourt, to support the development of university education in Nigeria. Influenced by the genuine demands from the proposal of these Universities, it provided funds and insisted on the establishment of the University Advancement Centres in each of these universities. This led to the establishment of such centres in Nigerian universities for the first time. The Centres were charged with the responsibilities of formulating the development plans of the Universities, raising the required funds and ensuring that the raised funds were utilized for the purpose for which they were raised. Staff was hired and trained both locally and internationally to enable them cope with the demands of the job.

Even though these Centres are operating at sub-optimal levels in their various universities for obvious reasons of inefficient administration, inadequate funding, understaffing, lack of trust from the Universities and the public and a good number of similar challenges, the University of Port Harcourt, in particular, has recorded a tremendous growth within the short period of establishment of its Advancement Centre. It is based on the successes of these

universities that we are recommending the University Advancement Centre to all Nigerian Universities as a reliable alternative strategy for their development.

What we intend to do in this work is to describe the various aspects of the profession and show how they can be utilized to fast track the development of a university and Nigeria borrowing from University of Port Harcourt case.

But before we proceed let's take a brief look at existing related theories and works to enable us appreciate the difference and the rational for the adoption of a more comprehensive and professional approach as the University Advancement Profession.

Related Theoretical Issues

So many development writers acknowledged the importance of education especially higher education in the development of an economy but not many of them commented on the issue of how education should be developed or who should fund it. Very few talked about how it should be developed but not who will provide the fund. This does not mean that they did not understand the importance of the issue but that they assumed it, especially for a developing country, to be the responsibility of the government or the proprietors. Recently; due to the decline in government funding worldwide, the issue is gradually attracting the attention of development scientist and comments on how the university should be developed and who should provide the funds are beginning to spring up.

A review of literature in this area of economics reveals eight schools of thought The Human Capital, The Screening, The Modernization, The Neo-Marxian, The Neutral Education Economists, Educational Development Advocates, Pro-University Advancement School and The Fore-Runners of University Advancement. Below is a brief discussion on each one of them.

The Human Capital School: Orivel (1996:501) when reviewing the International Encyclopedia of Education, 2nd edition, written by Martin Carnoy, said that the Human Capital Theory School is a group of economists who argued that education is an investment within the individual which increases his productive capacity. In their view, investment in human capital

contributed as much as investment in physical capital (machineries etc) in the development of an economy. They established a strong link between investment in education and economic growth. The belief in the tenets of this school led the government of most nations to invest heavily in the establishment and expansion of higher education. Proponents are Shultz, Denrilson etc. However, according to Rubenson in Burton (1992:4-7), it was observed that increased investment in education did not generate the expected economic growth and a realization of equalized access to available goods and services of the society and also income equity. They did not comment on how the educational institutions should be developed.

The Screening School: The proponents of the screening theory did not deny that investment in education leads to increased productivity. They rather observed that employers still prefer workers with higher levels of education. According to Orivel (1996:501) the screening theory school sees education as a tool. for employers for the screening of those who have the natural characteristics or competencies they need. For these economists, these competencies are basically innate and necessarily brought out by schooling process. He said that employers can not directly identify these competencies without school achievement. From their past experience they understand that there is a correlation between different types of school achievement of individuals and their capacities. According to Rubenson et al (1992), the screening theory explains that those with higher levels of educational qualifications at the time of recruitment display superior personality traits which are interpreted by the employer to mean the possession of cognitive skills, self reliance, achievement drive and compliance with organizational rules. For Thurow, according to Rubenson, the employers are basically hiring job applicants in terms of their trainability. In summary, this group of economists argue that educational achievements are used as a proxy by employers for identifying the right individual for a given job position. Proponents of this school of thought are Blaugh M, Thurow L.C., etc. They also did not comment on how the educational institutions should be developed.

The Modernization School: According to Fagerlind and Saha (1989:50 — 57) between the 1950s and 1970s arose another school of thought basically sociologists, that generally held the view that there is a direct relationship

between education and socio-economic development. Like the human capital theorists, they held that education brings about change in the individual that promotes greater productivity and efficiency. They focused on the modernizing influence of education on values, beliefs and behaviour. This led to the birth of the modernization theory. The theory holds that in order for a society to become modern develop economically and socially, a modern population that has modern values, beliefs and behaviour must constitute it. They contended that education is the most important agent for transforming a traditional society into a modern one hence the influence of these theories on government policies on education virtually throughout the world which led to the expansion in the sector within the 1960s and 1970s.

The Neo-Marxian School: The Neo -Marxists do not deny, according to Fagerlind and Saha (1989:58 & 59) that education can contribute to economic progress. Rather they contend that it reflects and serves the interest of those in power and tend to perpetuate the inequities of the social system. Secondly, it is their view that education produces Lunpenbourgeoise — local elites who serves overseas interests and strengthens underdevelopment. It also produces docile and compliant work force thereby re-enforcing and reproducing the capital class strength. There criticism is focused on the western model of education and not education in its entirety. Despite the above concerns it is still the common belief in the socialist countries — former Soviet Union, China, Korea, Cuba and Tanzania, that there is a strong positive relationship between education and economic growth. For that reason, according to Fagerlind and Saha, education has continued to enjoy a strong support from the government in these countries. As a result China and Cuba were able to attain adult literacy levels of 70% and 98% respectively. The proponents of the Neo-Marxist theory are Bernstein, Bowles &Gintis etc.

The Neutral Educational Economists: There are a good number of economists who also saw education, especially at the higher level, as a very vital tool for economic development. They do not properly fit into any of the above schools for the fact they wrote generally about the beneficial or development effects of education. They tended to adopt the positive education features of all the schools but did not talk about how it should be developed. They did also not ask the government or any other stake holder to invest in

education. Such economists are Jibril, Kashoki, Kuznet, Matazu , Jones, Adam, Marshall, Ekpeyong, Bernett and Abiodun.

Educational Development Advocates: The next school of thought is what we have called Education Development Advocates. These Economists, who agree with the views of all the schools above, went the extra length of seeking government intervention for the development of education since the overall effect will be positive on the economy. They advised the government to invest heavily in education and continue to sustain it for the overall development of the economy. Proponents are Gould, Dunstan, Olubor, Onyido, Adeniyi, etc.

The Pro-Advancement: These economists also agree with the major tenets of all the above schools. The distinguishing feature of this school is that they asked both the government, industry and other stake holders to get involved in the development of educational institutions. They did what the Advancement professionals do, even though, in a less professional manner. The school of thought is made up of Ajeyalemi, Ucha and the South Commission.

Fore-runners of the Advancement Profession: This school, like the last three groups above, agrees with all the arguments of all the schools above, and invites both the government and all other stake holders to the development of education. What distinguishes them and gives them their position as the fore-runners of the advancement profession is that though they were not advancement professionals but they were able to make prescriptions of what should be done to actualize the needed development of the educational institutions. Some of those prescriptions are still useful and reliable in the profession today. Their prescriptions include:

- The universities should look inwards to be able to develop ideas that will enable them meet the world-wide changing trend and challenges.
- Improvement of educational facilities, advancement of studies, development of links between centres of research and learning, purchase of innovations and intellectual properties etc. Both the state and the private actors should contribute to the generation and transmission of science and technology through the development of the Universities.

- That the government should challenge the universities with specific problems and time limits and provide the academic infrastructure necessary for undertaking such task;
- The universities should tailor their research to the needs of the economy.
- The Universities should go to the corporate bodies for funding, while internal funds are expected to be raised from library fees and the students levy through consultation of the students by the management.
- The buy-a-book programme in which each student is expected to buy at least a text book and donate to the university library which will expand the library stock of books.
- That the salaries of academic staff, their conditions and career prospects should be at the level that can minimize the loss of trained teachers and avoid teachers taking additional jobs in order to survive
- That 20% of total government aids should be allocated to education. They also urged Non-Governmental Organisations to give priority to education especially curriculum development, teacher upgrading and research.
- Appropriate coordination of the funding of the Nigerian universities
- Funds needed will be raised from students through charging fees, introduction of students' loan programme, endowment and community participation in the provision of school buildings
- University/Industry linkage.
- Training and retraining of the teachers
- At least, 75 % funding of some selected students' projects to encourage them.
- The university should collaborate with the relevant industries to ensure that students' research products are effectively utilized to achieve the national industrial goal.
- Introduce incentives to encourage the private sector to work with the universities in funding research.
- All tiers of government should give scholarship and bursaries to indigent arid exceptional students and encourage the private sector to do same.

- Communities, leaders, Parent-Teachers Associations, Youth Development Associations, youth development associations and the public should be mobilized to participate in the provision of academic infrastructure.
- The development of a working relationship with the government and well targeted donor support.
- A partnership and joint management of research institutions with associations of the private sector
- The funding solution of commercializing research results and loan schemes
- Prudent management of the existing resources and entrenching the culture of strategic planning. While looking for more funds we should be able to manage the one we have properly and there should be a properly laid down plan of what the funds we are sourcing will be used for.
- A participatory approach that brings all stake holders to the reform of the sector.
- Borrowing for development of the universities,
- Allowing a Vice Chancellor that has been adjudged by the university governing council and other stake holders on campus as good, visionary, transparent manager, a go- getter, and a good fund raiser to run for as many terms as is acceptable by the stake- holders for the sake of continuity.

The economists in this school of thought are Nebo, Umeh, Tudun-Wada, Baum & Tolbert, lghedo, Ali, Cornia and Jong, Enos, Kinyanjui and Emovon.

The Advancement Gap

The above theories and works carried out in this field have actually brought out so many strategies which are already in use in many Nigerian universities today. But they are currently practiced in the universities haphazardly and without coordination and hence achieving very sub-optimal results. In the case of increasing students levy as a means of raising more funds, we are all aware that that has always resulted to truncations of academic activities and even outright closure of the universities through students reactions. But this is not to say that it is not a potent means of fundraising. It is, if properly managed. Another major source of raising funds that was pointed out in the literature is

university investment. The problem encountered here is inadequate management of the investment and corruption. Another source of university advancement that has already been pointed out in the existing literature is University/Industry linkages. The problems here are on management of the linkages and the problem of how. Borrowing for development of the universities, for the purpose of hostel building and maintenance or investment that are income yielding, can be allowed provided the interest rate is low enough to enable profit making and repayment. Allowing a Vice Chancellor that has been adjudged by the university governing council and other stake holders on campus as good, visionary, transparent manager, a go-getter, and a good fundraiser, to run for as many terms as is acceptable by the stake-holders for the sake of continuity, will serve the development intentions of the university well if. But this is a politics laden issue that involves much. It may not be easy to have the stake holders to continue to agree to return such Vice Chancellor. A lot of other suggestions that have been made depend on the availability of funds

The University Advancement Centre

The establishment of the University Advancement Centre in Nigerian universities is strategic alternative. University Advancement Centre is charged with the responsibility of designing the university's development and fundraising plan and coordination of all activities that will generate the required funds for the execution of the development plan. It is a more comprehensive approach to the development of the university. A lot of the suggestions made by earlier writers above are components of the centres activities. From time to time it generates, the development plan of the university and in accordance with the funding requirements of the plan, comes up with a fundraising plan. It also goes further to raise or generates the funds and ensures that the funds are used for the various purposes for which they were raised. The Centre is structured in such a way that enables it perform this onerous task. We find from one university to the other different structures but all have essentially the same components that enable it function effectively. What we have done here is to provide all the various essential components with explanation of their functions.

Students Relations: The Students Affairs Department of every university is currently charged with the responsibility of caring for the students. In addition to what this department is doing the academic or teaching department of the student should see it as a priority responsibility to build a very cordial (father/child) relationship with the students irrespective of their performance. Such relationship, if properly managed, could live lasting positive impressions on the student even after graduation. A little get-together welcoming the students on admission and a special class party during graduation could make a difference. The nostalgic feelings of this treat will have the effect of giving the young graduates the sense of indebtedness towards the department. You can never tell who will be the next governor or president. The time when we treat students as if we are at war with them has past and is no longer fashionable. It is time to construct very strong relationships with the students before they graduate. For these reasons a unit charged with the responsibility of designing and executing students relationship building programmes is necessary.

Alumni Relations: Alumni have become a very important partner in the development of the university. We have come to the realization that the value of your degree is as good as the profile of your almamata. It is therefore in the interest of the alumni that he does his best in supporting the development of the university which he graduated from. But most of them may not even know the: needs; of their parent university or how to assist. Hence even when they are properly positioned to support, the university may never get such assistance. This calls for a more serious work on alumni relations. Beginning from the department to faculty and at the university levels there should be staff whose responsibility is to handle alumni relations. They should collect, update and store data on the alumni and care for them. We want to get to the point where the ceremonies of an alumnus/alumna are attended by the Head of the Department of where he/she graduated from. Experience has shown that even things as ordinary as birthday cards and congratulatory letters sent to the alumni by the Head of Department, Dean of Faculty or the Vice Chancellor made of a lot of positive impact on the alumni. This unit designs programmes for the development of alumni relations and manages and sustains such relationship

University/Industry/Government linkages: The university must partner with the industry for the society to experience economically meaningful science and technological advancement. In Nigeria the industry has been operating oblivious of the science and technological break-through existing in the universities. And the universities are operating without adequate information on the science and technological challenges of the industry. The government on its side will prefer to invite scientist experts from abroad to proffer solution to the technological challenges of the economy. This situation is not a healthy one and is aggravating the technological backwardness of the economy. There have been attempts in the past to bring these three important partners of technological advancement together in the name of University/government and Industry Partnership. But this has yielded little or no fruit since the issues discussed at such forums are abandoned soon after the meeting. It is supposed to be the responsibility of the university to forge this kind of relationship, manage and sustain it. This can be done by establishing the University/Industry and Government Linkages Unit. Once established it becomes their responsibility to search for the needs of the industry and the government and channel such needs to the appropriate department of the university's for prompt responses and also, as often as possible, cause the three partners to meet: It is at such forums that the government and the industry can challenge the university with their problem and have the opportunity of seeing for themselves what possible solutions are already available from concluded researchers efforts.

Exchange and Linkages: The unit is charged with the responsibilities of searching for opportunities for staff and students exchange with other universities especially foreign universities and for scholarships and fellowships. Staff exchanges are usually for the purpose of research and are usually initiated by staff of a university and brought to the attention of the Unit for expert processing. But often a university that wants to exchange staff or have some linkage relationship with University of Port Harcourt, for instance, can write to the Vice Chancellor of the University of Port Harcourt. Such letter will be referred to the Exchange and Linkages unit for processing. Once an exchange or linkage relationship has been established the fund required for the activities, travels for instance, will be raised by the Advancement Centre.

Project Development: Within the advancement centre there should be a unit charged with the responsibility of designing projects for the university based on its needs. Such unit generates when necessary fundraising proposals and case statements for development projects of the university. This unit designs the Capital Campaign, the Annual Giving, Major Giving programmes of the university.

Prospect Research Unit: Through steady research the "who is who" of the country and the world are in the finger tips of occupants of this office. The output of this unit forms the input the relationship management office.

Donor Relationship Management: In Nigeria donors have been making gifts to the universities. But due to poor management of donor relationship most of them give only once and may never give again. The standard is that donors are not asked more than once in a year, but could be asked to make a gift to the university every year. A donor that makes a gift to a university should be appreciated. This can be done by sending him an official thank-you letter from the Vice Chancellor; inviting him to university events; informing him of what his gift is being used for, celebrating the gift and attending his ceremonies. A unit is charged with the responsibility of handling donors' relationship.

Events Management: This unit is charged with the responsibility of managing the university events. Existing university events could be redesigned for fundraising purposes. New ones could be developed and designed to meet the fundraising requirement.

Stewardship: Currently stewardship is not taken seriously by the universities and this accounts for the apathy of donors towards the universities requests. Stewardship is about accountability. In advancement it is about giving account of the various gifts that has been given to the university by the chief executive of the university. It is another very important unit of the Advancement office. A donor that is sure that what he gave is utilized for the purpose of which he gave it, will be more favourably disposed to making more gifts if asked than the one that is not. The unit is charged with responsibility of generating data on gifts received by the university and ensuring that such gifts are used according to the donors wish and keep the donor informed of how the gifts is

being used. This unit also ensures that the university community and all stakeholders are informed of how the university investment and endowment fund is fairing.

The Development of the Nigerian University

Development of the Universities involve improving the infrastructural facilities, upgrading the staff capacity for both carrying out the necessary research, learning and transfer of knowledge and providing the necessary academic support services. None of these could be carried out without adequate funding. Establishing the University Advancement Centre will enable the university to go into the society, both within and outside the country, to ask for funding from the individuals, corporate organizations, NGOS, Foundations, alumni and even students for the development of the universities.

Through the effort of the centre, the various units discussed above will be attracting funds. For example, through the adequate students relations individual students will be making legacy gifts to their various departments; the alumni will be willing to give back to their parent department and university; the industry, for instance, will be very interested in research that will improve their efficiency or provide alternative source of input and will want to sponsor it; research and development effort of the government will be carried out through the universities and their institutes and that will attract huge funding from it. By the time the university start becoming famous for its teaching, research and learning, parents of the students and individuals will start approaching them for immortalization of their names and those of their loved ones with named buildings.

If the various units perform their functions creditably, especially, if the donor relationship and stewardship are properly handled, there will be a continuous flow of funds to the universities. And depending on how-successful the university is in producing societal problem solving quality research and graduates, more government funding could be attracted for the provision of the academic infrastructure and staff upgrading.

All this will lead to an increasing profile of the university which will attract more potential students to enroll and increasing the chances of the university

raising huge funds through student fees. But here the students must not be taken for granted when increasing fees. Their leadership must be consulted and carried along from the strategic planning stage to that of implementation. This gives them a strong sense of recognition and belonging and also helps them understand why the fees have to be increased. Students will be more willing to respond positively and even make individual donations if this is done and the stewardship publications are readily available to them and their leaders.

All things being equal this trend will continue until the university achieves development. This will have very favourable effects on the economy as it will in turn start once again to harvest quality human capacity and research output from the universities for the economic advancement of the entire economy. Above all is a hidden positive externality to the entire economy of this alternative. The advancement profession helps to redistribute income from the rich to the poor without attracting their negative attention and also channel excess resources away from frivolities to more desirable societal ends.

The story of the rapid development of the University of Port Harcourt within an interval of just five to ten years attests to this.

University of Port Harcourt Advancement Centre's Experience

The University Advancement Centre (UAC) of University of Port Harcourt, started in 2002 as Exchange and Linkage Programmes Unit, (ELPU). It was charged with the responsibility of coordinating and facilitating the establishment of partnerships and collaborations between the University of Port Harcourt and other universities, foundations, donor & multilateral agencies, public and private sector, institutions and NGOs in all parts of the world. The ELPU was renamed University Advancement Centre in 2004. Initial funds provided by the MacArthur Foundation were used to equip the Centre and develop staff capacity. In June 2013, the UAC was transformed into the University of Port Harcourt Foundation (UPHF).

Performance of the Centre

Performance of the University Advancement Centre can be estimated using the following performance indicators:

Donor Cultivation: The Foundation started its cultivation by initiating and embarking on the awareness creation/sensitization of the internal constituents of the University. The programme was designed to create awareness about university advancement as well as mobilize support of the University Leadership, staff and students for the overall success of its maiden Capital Campaign. The Vice-Chancellor, Principal Officers and staff of the Advancement Centre constituted the team, which visited all the Faculties and Units of the University and talked with staff and students to own the Campaign. The outcome of this exercise was great. A culture of giving to education was planted in the University. The outcome was that the Students Union made a donation of 40 ceiling fans and magnetic boards to the Campaign and pledged to play volunteer roles for the Campaign. The donation is the first of its kind in the history of the University. Furthermore, staff voluntarily instructed the university to deduct at source, according to their various levels and capacities, amounts ranging between N500 and N10,000 monthly and that continued all through the five years period of the Campaign. It was the first of its kind in the history of Nigerian University. Staff and students also became much more aware than ever before, of the role and place of the Foundation in the development of the University.

Fundraising: 1. The Senate building project was a major breakthrough for the University Advancement. The Foundation initiated the idea of building a Central hub for the University's Administration. It raised the sum of $500,000.00 from the MacArthur Foundation for the substructure, and N150,000,000.00 for the superstructure from Bayelsa State government during the tenure of Dr. Goodluck Ebele Jonathan as Governor. **2.** The annual giving programme is a fundraising vehicle used to raise unrestricted funds for the day to day running of the University. Annual Giving pledges are usually redeemed annually and run in perpetuity. This programme was launched in the University in April 2009, at the Pro-Chancellor's Lodge. During the event, pledges were made. The MacArthur Foundation represented by its West African Director, Dr. Kole Shettima, pledged a Matching Gift of $100,000 at that event. Presently the account has a balance of N334, 000.00. **3.** Scholarship Scheme was one of the projects of the Maiden Capital Campaign. Dr. Joseph Sanusi gave N1, 000, 000.00 to the Scheme for best Student in Accounting, Banking & Finance for five years, while Dr.Chike Akunyili gave N500,

000.00 for best student in Medicine for 10 years. **4.** The Foundation initiated the establishment of an International Student Centre which was charged with the responsibility of carrying out the University's exchange and linkages programmes. The money for the building of the Centre was raised. The staff of the Centre were trained on Research Proposal writing by the Foundation. **5.** The Foundation initiated and developed the curriculum for a degree programme in Hospitality Management and Tourism and also raised the sum of N90, 000, 000.00 for the departmental building. **6.** The Foundation cultivated a premier alumnus, Dr. Osaisai, the Director General of Atomic Energy Commission who subsequently donated the building for the Centre for Nuclear Energy Studies and another for the Centre's Laboratory. **7.** The Foundation and the University Management launched and the University of Port Harcourt Endowment Fund, during the 2011 Convocation Ceremony. The money for a two-storey building for the Patience Jonathan Gender & Women Development Centre was donated during the launching and over N550m was raised for the Endowment Programme. **8.** During the tenure of Dr.Goodluck Ebele Jonathan as Governor of Bayelsa State, the Foundation raised the sum of N62,000,000.00 for restructuring of the Alumni Hostel. **9.** Chief Lulu Briggs donated the Health Centre Complex valued at the cost of N50 million, for the University. He also gave N20 million for the purchase of equipment for the Health Centre. The centre was renamed after him as Lulu Briggs Health Centre. **10**. The Foundation cultivated Mrs. Seinye O B Lulu-Briggs, who donated the Seinye O B Lulu-Briggs Children Park in 2014 to the University. **11.** Through the efforts of the Foundation in 2013, the family of Emily Okwukwu revamped the Food / Industrial Research Laboratory situated in the Department of Microbiology. The lab was renamed after her as the Emily Okwukwu Food/ Industrial Research Laboratory.

University/Industry Forum

The university initiated a University/Industry relationship. With the support of the British Embassy it hosted a University/Undustry forum which brought the industrialists to rob minds with the academics on how to solve mutual problems. This led to the establishment of so many centers and institutes that produce industry fitted human resources. One of such institutes is Institute of Petroleum Studies which has gained international recognition in producing

quality engineers and scientists that fit in into the world petroleum sector without retraining.

Linkages

Between 2002 and 2006, collaborations with 14 Higher Education Institutions and other organisations spread across the United States, Canada, South Africa and Nigeria were successfully established. These include: Pittsburgh State University, Kansas, USA, University of Witwatersrand, South Africa, University of Calgary, Canada, etc.

Other Development Impact of the Foundation

1. The Foundation initiated the development of the following programmes as evidenced in the Capital Campaign brochure, namely: the Port Harcourt Business School, the Department of Music, Faculties of Dentistry and Pharmaceutical Sciences, Sports Medicine as well as the collaboration for the Joint Master of Engineering Management between the University of Port Harcourt and University of Pretoria. **2.** The Foundation developed and implemented a programme tagged "Alumni Lecture Series". The aim of the project was to cultivate the alumni, prepare students for life after school and inculcate in the pre-alumni, the spirit of philanthropy and of giving back to their *alma mata*. This programme brought back on campus some distinguished alumni who spoke to students of all the faculties on different occasions. **3.** Under staff training/Upgrading, Fundraising Fundamentals (Fun-Fun) workshop was organized for Staff of the University, to train them on proposal writing to expand fundraising activities within the University. Between 2007 – 2012, more than one hundred and thirty staff of the University have been trained. This has contributed to the increase in the number of grants and fellowships awarded to staff of the University. In 2015, eighteen staff of the Institute of Petroleum Studies (IPS) were given a three day training on Fundraising Fundamental and Alumni Relations.

Championing the Cause of Institutionalising Advancement in Nigeria: The Foundation at the time was recognised as the foremost and leading advancement office in Nigeria. It was in the vanguard of promoting Advancement as a new profession with enormous potential for facilitating the development process of Nigerian Universities. These were evidenced in:

1. The Foundation initiated and developed the career and salary structures for Advancement staff in Nigerian Universities. These were adopted for implementation at the second Forum of Advancement Directors and Chief Development Officers of Nigerian Universities, held at the University of Port Harcourt in June 2006. Some Nigerian Universities have implemented these structures such as the Obafemi Awolowo University, Ile-Ife.
2. Some staff of the Foundation were invited by Council for Advancement and Support for Education (CASE) Europe to facilitate a CASE Educational Advancement workshop in Ghana and Nigeria.
3. Equally, in 2007, the Foundation helped in setting up advancement offices and training of advancement staff for Stella Maris University, Port Harcourt and Obafemi Awolowo University, Ile Ife. Staff of the Stella Maris University were trained in Educational Fundraising and Proposal writing while staff of the Obafemi Awolowo University, were trained in the Management of an advancement office and proposal writing.
4. Also, the Federal University of Technology, Akure requested the Foundation to give a one month internship training to its Development Officers.

The University Capital Campaign was officially launched at the 22nd Convocation Ceremony of the University on March 11, 2006. The Campaign goal was to raise N6, 621, 190, 000.00 within the period of five years (2006 – 2010). More than 80% of the projects in the Capital Campaign have been achieved. In addition the Campaign turned out to be a vehicle for developing new relationships, nurturing old ones and providing private support for the institution.

Again there is a hidden positive externality to the entire economy of this fundraising strategy. The advancement profession helps to redistribute income from the rich to poor without attracting their negative attention and also channel excess resources away from frivolities to more desirable societal ends.

Lessons from University of Port Harcourt

The University is one living example of where the Advancement Profession has been practiced successfully. Today the University is ranked among the

best universities in Nigeria and Africa. One very visible outcome of the Advancement endeavour is the huge infrastructural development witnessed within a very short interval in the University. The university experience has demonstrated that the advancement culture is a more reliable development path to take.

It has also shown how university/Industry partnership an aspect of the Advancement work has brought needed funds that have led to the advancement of both the university and the industry and this is affecting the development of Nigeria today in terms of availability of quality human capacity. The oil industry in particular is benefiting from the advancement effort of the University of Port Harcourt.

It has also shown a way of engaging students other raising school fees. Today projects are carried out in various departments of the University. You will even find students organization embarking on construction of classroom project for their department.

If the University of Port Harcourt had waited for government intervention alone it wouldn't have achieved this much. Physics teaches that everybody will continue to be in a state of rest unless compelled by an external force to act otherwise. It is time for the universities to do something outside the routine to pull themselves out of the doldrums and put them on the development part. A large pool of funds is waiting out there but it is only those universities that have so positioned themselves that can see and tap from this pool. The University of Port Harcourt experience shows that University Advancement Centre helps to reposition the university to be able to access these funds.

Concluding Remarks

Every Nigerian university is therefore urged to urgently establish the University Advancement Centre. The staff should be well trained and the centre well funded and managed for improved alternative funding. It is also recommended that Nigerian universities should visit the advancement centre of University of Port Harcourt to be able to tap from their wealth of experience for better advancement experience.

References:

Abagi, O in Babalola, J B & Emunemu, B.O. (2007) *Issues in Higher Education: Research Evidence from Sub-Saharan Africa,* Bolabay Publications, Lagos._Abdulkadir, I A in the Proceedings of the. 19th Annual Seminar of the Committee of Vice Chancellors of Nigerian Federal Universities held at Abuja in 2002

Abiodum, A. A in Adeniyi P. O. (1999) *Research Capacity Building for Sustainable Development in Nigeria: Problems, Challenges and the Way Forward*, Unilag Consult, University of Lagos, Lagos.

Adeniyi, P. O. (1999): *Research Capacity Building for Sustainable Development in Nigeria: Problems, Challenges and the Way Forward*, Unilag Consult, University of Lagos, Lagos.

Adjibolosoo, S B-S K (1995): The Human Factor in Developing Africa, Praeger Publishers, West Port, London. *African Review of Business and Technology (*2005*)*, Alain Charles House, London

Agrawal (1993): *Indian Economy: Problems of Development and Planning*, 19th Revised Edition, Wiley Eastern limited, Delhi.

Aina, O.I in Babalola, J B & Emunemu, B.O. (2007) *Issues in Higher Education: Research Evidence from Sub-Saharan Africa,* Bolabay Publications, Lagos.

Ajeyalemi, D (1990): *Science and Technology Education in Africa: Focus on Seven Sub-Saharari Countries,* University of Lagos Press, Lagos.

Ake, C (1996): *Democracy and Development in Africa,* Spectrum Books Limited, lbadán, Nigeria.

Akpakpan, E B (1994): *How to Save the Naira and Nigeria: Macroeconomics in Action,* Belpot (Nig.) Co., Abak, Nigeria.

Ali, A in Arewa House (1994) *Nigeria, the State of the Nation and the Way Forward,* Arewa House, Kaduna.

Aluko-Olokun in Adeniyi P. O. (1999) *Research Capacity Building for Sustainable Development in Nigeria: Problems, Challenges and the Way Forward,* Unilag Consult, University of Lagos, Lagos.

Amadi, V A. (1994) Problems of the Educational Development: Guidelines for Special Education Programmes, *Nigerian Journal of Professional Studies in Education* (November 1994) Vol. 2 No.1, Nigerian Association of Professional Studies in Education.

Anosike, in Fagerlind & Saha, L.J. (1989) *Education and National Development: A Comparative Perspective*, Second Edition, Pergramon Press Plc. England.

Arewa House (1994) *Nigeria, the State of the Nation and the Way Forward*, Arewa House, Kaduna.

Awofeso, A (1990) *M K 0 Abiola: To Make Whole Again*, Update Communications Limited, Lagos.

Babalola, I.B and Ernunernu, B.O (2007*) Issues in Higher Education.: Research Evidence from.1 Sub-Saharan Africa*. Bolabay Publications, Lagos.

Balogun, M J (1987) Education & Unemployment Crises in Nigeria The Proceedings of the Conference on Human Resources Development and Utilisation Policy organized by Administrative Staff College of Nigeria, (ASCON), png, S: *NJPSE* Vol.1 No.1.

Bárling, J.K & Akinrinade, O. (1987): *Economic Development in Africa: International Efforts, Issues and Prospects,* Pinter Publishers, London.

Barnett, R (1990): The Idea of Higher Education, *The Society for Research into Higher Education* & Open University Press, Buckingham, Great Britain.

Baum, W C & Tolbert, S M (1985) *Investing in Development: Lessons of World Bank Experience*, Oxford University Press, London.

Beasley, W G (2000) *The Rise of Modern Japan*, Third Edition, Orion Publishing Group Ltd., London.

Bennett R.I & McCoshan, A (1993): *Enterprise and Human Resource Development: Local Capacity Building*, Paul Chapman Publishing Ltd., London.

Bentwich, J. S (1965*) Education in Israel*, Routledge, London

Betrand, R in Jack, D R L (1998*) Social Development: Lest we forget People First*, PKD, Ltd, Lagos.

Bratton, I & Gold, J (1999) Human Resource Management: Theory & Practice, Second Edition, MacMillan Press Ltd, London.

Bowles and Gintis (1976) Fagerlind, I and Saha, LJ.(1989) Education and National Development: A Comparative Perspective, Second Edition, Pergamon Press Plc. England.

Brundtland (1991): in Stokke, O (1991:38) Sustainable Development: A Multi-Faceted Challenge, *The European Journal of Development Research*, Volume 3, Number 1, Frank Cass & Co Ltd, London.

Carnevale, A.P, in Burton, L.E (1992) Developing Resourceful Humans: Adult Education Within the Economic Context, Routledge, London. ..

Chantller, J. in Thomson (1993) Learning and Technological Charge, Macmillan Press Ltd:, London.

Cteveland P., Gronbacher, G. M. A., Quinlivan, G. &. Therrien, M (2001) A Catholic Response to Economic Globalization, *Christian Social Thought Series,* Number I, Acton Institute, Michigan, USA.

Cornia, G A & Jong J D, in UNICEF (1992) *Africa's Recovery in the 1990s: From Stagnation and Adjustment to Human Development*, St. Martin's Press, New York.

Dewey, J in Dunstan, J (1992) *Soviet Education under Perestroika*, Routledge, London.

Dozie, P & Bickersteth, O. (1993) *Economic Action Agenda*, Spectrum Books Limited, lbadan

Dunstan, J (1992) *Soviet Education under Perestroika*, Routledge, London.

Elliott, R F (1991) *Labour Economics: A Contemporary Text*, MacGraw-Hill Book Company, London.

El-Rufai, N A (2005) Higher Learning and the challenges of Reform in Nigeria, Convocation Lecture of University of Port Harcourt, March 9th, 2006.University of Port Harcourt Press. University of Port Harcourt, Choba, Port Harcourt.

Emovon, E.U in Adeniyi P. O. (1999*) Research Capacity Building for Sustainable Development in Nigeria: Problems, Challenges and the Way Forward*, Unilag Consult, University of Lagos, Lagos.

Enos, J. I. in UNU and INTEC (1995): *In Pursuit of Science and Technology in Sub-Saharan Africa: The Impact of Structural Adjustment Program*, Routledge, London.

Eugene, S (1961) *The Future of Underdeveloped Countries: Political Impact of Economic Development*, Revised Edition, Frederick A Praeger Inc., New York

Hadenius, A (1992) *Democracy and Development,* Cambridge University Press, Cambridge.

Harrison, P (1990) *Inside the Third World: The Anatomy of Poverty,* Second Edition, Penguin Books Ltd, London, England.

Hawes, Coombe & Lillis (1986) In Ajeyalemi, D (1990): *Science and Technology Education in Africa: Focus on Seven Sub-Saharan Countries,* University of Lagos Press, Lagos.

Hayami, Y (1997) "Development Economics: From Poverty to the wealth of Nations", Oxford University Press Inc., New York.

Hirschmari, A.O. (1958) *Strategy of Economic Development*, Yale University Press, Connecticut, USA.

Hirst, PH & Peters R. S. (1991) *The Logic of Education*, Routledge, London. Vol.8 No. 1

Houston, R.A. (1995) *Literacy in Early Modern Europe: Cufture and Education 1500— 1800* 5th Impression, Longman, London.

Ighedo, J. A. (December 1999) Factors Inhibiting Undergraduate Technical Education Students' Choice of Practical Research Projects: A Study of Delta State University, Abraka, *in Journal of Educational Focus*, Vol. 2 No. 1,

Ilboudo, E. K., Compaore, M, Ouedraogo, B, Somba, P., Kabore, O., Ouedraogo, A., Kinda F., & Kanore B. (2001) *Review of education Sector Analysis in Burkina Faso, 1974-1994*, UNESCO, France.

Jack, D R L (1998) *Social Development: Lest we forget People First,* PKD, Ltd, Lagos.

Jibril, M (2002) The Proceedings of the 191 Annual Seminar of the Committee of Vice Chancellors of Nigerian Federal Universities held, Abuja

Jones, J in Fusarelli, L. D. (2004) The Potential impact of the No-Child-Left-Behind Act on Equity and Diversity in American Education, *An Interdisciplinary Journal of Educational Policy and Practice,* Politics of Education Association, Crown Press.

Kashoki, M.E. in Turok B. (1979): *Development in Zambia: A Reader*, Zed Press, London.

Kinyanjui, L. in Himmeistrand, U., Kinyanjui & *Mburugu, E., (1994) African Perspectives on Development: Controversies, Dilemmas and Openings,* James Currey Ltd, London.

Kirkpatrick, C.H., Lee, N & Nixon, F.I. (1984) *Industrial Structure and Policy in Less Developed Countries,* George Allen and Union (Publishers) Ltd UK.

Kuznet in Hayami (1997) *Development Economics: From the Poverty to the wealth of Nations,* Oxford University Press Inc., New York.

Kwanashie, M (2002) The Proceedings of the 19th Annual Seminar of the Committee of Vice Chancellors of Nigerian Federal Universities held, Abuja.

Latapi, P in UNESCO (1982) *Higher Education and the New International Order: A Collection of Papers*, Frances Printer (Publishers), London.

Licha, I (1992) The Role of the State in Development Processes, in *European Association of Development Research and Training institutes EADI,* Frank Cass & Co Ltd., London

Mario M, Fry P. Levey L.A. & Chilendo A. (2003): *Higher Education in Mozambique: A Case Study*, James Hurrey Ltd, Oxford.

Marshall, A (1920) *Principles of Economics,* Macmillan, 8th Edition, London.

Marshall, A in Schultz, T.W. (1993) *The Economics of Being Poor,* Blackwell Publishers, Cambridge, USA.

Matazu, G. (2002) in the Proceedings of the 19th Annual Seminar of the Committee of Vice Chancellors of Nigerian Federal Universities held at Abuja.

McConell, C R & Brue, S L (1992) *Contemporary Labour Economics,* Third edition, McGraw-Hill Inc., New York.

Meier, G M (1984) *Leading Issues in Economic Development*, Fourth Edition, Oxford University Press, Inc., New York.

Meier, G M in Agrawal (1993) *Indian Economy: Problems of Development and Planning*, 11th Revised Edition, Wiley Eastern limited, Delhi.

Mkude, D., Cookery B. & Levey L. (2003) *Higher Education in Tanzania: A Case Study*, James Carney Ltd, Oxford.

National Forum for Policy Development (2007) National Education Reform: An Alternative, National University Commission, Abuja.

Nkovadu, O. (2000) *Development Economics in Public Administration*, Pan Unique Publishers, Port Harcourt.

Nnoli, 0 (1993) *Dead End to Nigerian Development: An Analysis of the Political Economy of Nigeria, 1979 — 1989* Codesria, Dakar, Senegal.

Nwigwe, B. E. (2004) An Idea of a University *Lunch Time Meeting Series,* University Advancement Centre, University of Port Harcourt.

Ogunleye, A in Onwuka R. I. & Aluko O. (1986) *The Future of Africa and the New International Economic Order,* Macmillan Publishers Ltd., London.

Okebukola, P (2005) Manual on Strategic Planning for Nigerian Universities and Inter- University Centres, National Universities Commission, Abuja.

Okigbo, P. N. C. (1993) Essays in the Public Philosophy of Development, volume 4, Lectures on the Structural Adjustment Programme, Fourth Dimension Publishing Co. Ltd. Enugu.

Okonjo, C (2000) *Nigeria in the First Decade of the 21st Century: Strategic Insights for Policy Making*, Spectrum Books Limited, Ibadan

Okowa, W. J. (1991) *The Political Economy of Development Planning in Nigeria*, Pam Unique Publishing Company Limited, Ozuoba, Port Harcourt

Olubor, R.O. (1995) An Analysis of the Educational Implication of the Education Industry in Nigeria, NJPSE Vol 3,

Orivel, F (1996): *The Economics of Education in Oxford Review of Education*, Vol. 22, No. 4, Carfax Publishing Ltd, Oxford.

Page, D in Ajigboloso S B-S K (1995): *The Significance of the Human Factor in African Economic Development*, Praeger Publishers, London.

Palmer, B H (1996) Research in Higher Education, *Journal of the Association for Institutional Research, (AIR)* Volume 37, Number 1, Human Sciences Press Inc., New York.

Rubenson K, in Burton L.E (1992) *Developing Resourceful Humans: Adult Education Within the Economic Context*. Routledge, London.

Seidman A. & Anang, F. (1992) *Twenty-First-Century Africa: Towards a New Vision of Sustainable Development in Africa*, World Press Inc., Trenton, New Jersey.

South Centre (1998) Elements for an Agenda of the South: the report of the Ad Hoc Panel of Economists of the Non-Aligned Movement (Presented to the Twelfth NAM Summit) at Durban, South Africa, South Centre, Geneva.

South Centre (1998) *Towards an Economic Platform for the South,* ATAR, Geneva.

South Centre (1999) Elements for an Agenda of the South: the report of the Ad Hoc Panel of Economists of the Non-Aligned Movement South Centre, Geneva.

Stokke, O. (1991) Sustainable Development: A Multi-faceted Challenge, *The European Journal of Development Research*, Volume 3, Number 1, Frank Cass & Co Ltd, London.

Topo, Badagry(1992) *Human Resources Development and Utilisation: Policies and Issues*, Spectrum Books Limited, Ibadan.

Tembo, L. P in Turok B. (1979) *Development in Zambia: A Reader*, Zed press, London.

Thakur, A.S & Ezenne A. N. (1980) A Short History of Education in Nigeria, De Ayo Publications, Ibadan.

The Guardian (June 24, 2008) Graduates of Oil-related Courses Unemployable, Says Agip Boss, Guardian Newspapers Limited, Lagos.

The Guardian (July 6, 2008) UNN VC Says Graduate Unemployment is Security Risk, Guardian Newspapers Limited, Lagos

The Nigerian Economic Summit Group (1998) Report on the Fourth Nigerian Economic Summit, Spectrum Books Limited, Ibadan.

The Nigerian Economic Summit Group (1999) The Report of the Fifth Nigerian Economic Summit, Spectrum Books limited,. Ibadan.

The South Commission (1993): The Challenge to the South: The report of the South-South Commission, Fourth Dimension Publishers, Enugu, Nigeria.

Tidjani-Serpos, N. (2006) 'Funding Opportunities for Higher Education in Africa' Global Educational initiative for Nigeria (GEIFON) UNESCO.

Tudun-Wada, L in ASCON (1992) *Human Resources Development and Utilisation: Policies and Issues* — Proceedings of the Conference on Human Resources Development and Utilisation Policy, Spectrum Books Limited, Ibadan.

Turok, B (1979): *Development in Zambia*: A Reader, Zed press, London.

Uva,i. I in Adeniyi P. 0. (1999) *Research Capacity Building for Sustainable Development in Nigeria: Problems, Challenges and the Way Forward,* Unilag Consult, University of Lagos, Lagos.

Uva I I in Okebukola P (2005) Manual on Strategic Planning for Nigerian Universities and Inter-University Centres, National Universities Commission, Abuja.

WCED (1987*): Our Common Future*, Oxford University Press, Oxford, London.

Yesufu, T. M (2000): *The Human Factor in National Development:* Nigeria, Spectrum Books Limited, Ibadan Nigeria.

TAX COMPONENTS AND ECONOMIC GROWTH IN NIGERIA

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Abstract

This paper examined the effect of Nigerian tax system on her economic growth. It set out to determine the causal relationship between various identified components of taxes considering her growth trajectory. The paper answered the question of the contribution of the identified tax components using econometric methodology. Using the cointegration methodology ala granger the paper estimated the disequilibrium return rate and found that the contribution of Petroleum Profit Tax to gross domestic product is positive and significant over the years and a further increase will result to a rise in gross domestic product. This shows that PPT is vital to the growth of the Nigerian economy. Therefore, the government and the Institution in charge of tax collection should ensure that companies dealing with petroleum both in downstream and upstream should not avoid or evade tax. The study fails to accept the null hypothesis which state that PPT as a component of taxation has no significant impact on GDP. This result agrees with the findings of other earlier studies.

Keywords: Tax, Economic Growth, Nigeria.

Introduction

Taxation is the most important institutional instrument for government acquisition of resources for financing the discharge of its responsibilities. Agiobenebo et al(2003) Historically, the Nigerian tax system has undergone challenges ranging from poor tax administration, obsolete tax laws, multiplicity of taxes, structural challenges in the economy affecting the maximization of Value Added Tax (VAT), unavailability of tax statistics, paucity of tax data base, poor governance, corruption and poor methods collection. Odusola (2006). Ariyo (1997), Amin (2000), Muriithi and Maji (2003) cited in Ifurueze and Ekezie (2014) pointed out that a good tax system should be able to generate the needed revenue for government for

redistribution and investment infrastructure its provision guarantee for business to strive and economic growth if government expenditure is majorly derive from tax. Various researchers and experts differs on the impact tax has on economic growth. For instance, Ogbonna and Ebimobowei (2012) Umoru and Anyiwe (2013) results differs on the impact tax policy has on economic growth hence, it become hard to draw policy implication from. This made it more Important to make some clarity about how the Nigerian tax system affect economic growth and development.

In the course of this study, the following specific research questions were be asked.

What is the relationship that exists between economic growth and tax components in Nigeria?

ii) What are the impacts of the tax components on the growth of the Nigerian economy?

iii. What is the way forward to effective and efficient tax system in Nigeria?

This study evaluated the Nigerian tax system challenges and way forward. The study covered a period of 35years, (1981 – 2015) in order to have wide coverage, that will provide results that are robust. Such result will address a wider scope and have better implication for policy.

The broad objective of this study examined the effect of tax system on the Nigerian economy; the specific objectives of this study were as follows:

to determine the relationship that exists between economic growth and tax proxies in Nigeria; and

to evaluate the impact of tax components on the growth of the Nigerian economy.

Literature Review

An Overview of the Nigerian Tax System

The tax system in Nigeria is made up of the tax policy, the tax laws and the tax administration. All of these are expected to work together in order to achieve the economic goal of the nation. According to the Presidential Committee on National tax policy (2008), the central objective of the Nigerian tax system is to contribute to the well being of all Nigerians directly through improved

policy formulation and indirectly though appropriate utilization of tax revenue generated for the benefit of the people. In generating revenue to achieve this goal, the tax system is expected to minimise distortion in the economy. Other expectations of the Nigerian tax system according to the Presidential Committee on National tax policy (2008) include;

1. Encourage economic growth and development.
2. Generate stable revenue or resources needed by government to accomplish loadable projects and or investment for the benefit of the people.
3. Provide economic stabilization.
4. To pursue fairness and distributive equity
5. Correction of market failure and imperfection.

In an attempt to fulfill the above expectation, the national tax policy is expected to be in compliance with the principle of taxation, the lubricant to effective tax system.

The Nigerian Tax Policy

The tax policy is a formal, articulated and documented set of fundamental principles to guide the tax system in a country. According to the report of the presidential committee on National Tax policy (2008), "The National tax policy provides a set of rules, modus operandi and guidance to which all stakeholders in the tax system must subscribe". Tax policy formulation in Nigeria is the responsibility of the Federal inland Revenue Services (FIRS), Customs, Nigerian National Petroleum Corporation (NNPC), National Population Commission (NPC), and other agencies but under the guidance of the National Assembly i.e. the law making body in Nigeria (Presidential committee on National tax policy, 2008). Suffice it to say that if there must be any effective implementation of the Nigerian tax system or attainment of its goal, the use of the national tax policy document remain absolutely essential. According to the Presidential Committee on tax policy (2008), "Nigeria needs a tax policy which does not only describe the set of guiding rules and principles, but also provide a stable point of reference for all the stakeholders in the country and upon which they can be held accountable. James and Nobes (2008) as stated in James and Moses (2012) decried the inability of tax policy to meet up with efficiency and equity criteria against which it is being judged. It was further noted that tax policy is continually subjected to pressure and changes which most time does not guarantee outcome that are in line with the

overall goal. Unfortunately, most policy changes in Nigeria are without adequate consideration of the taxpayers, administrative arrangement and cost plus the existing taxes. This has in no small measure hindered the effective implementation and goal congruence of the nation's tax system.

The Nigerian Tax Laws

The Nigerian tax laws are purely statutory and remain the legal instrument of authority to implement the tax policies of the country. The following are the tax laws in Nigeria which have undergone series of amendments over the years.

Companies Income Tax (CIT) Cap 60 LFN, 1990. This tax imposes a tax at the rate of 30% on total profits of companies.

Education Tax Act No.7, 1993 which imposes a 2% rate on assessable profits of Nigerian companies.

Petroleum profit Tax Act Cap354, LFN 1990. This act imposes tax on the operation of companies in the oil and gas industry.

Personal income Tax Act (PITA) No.104, 1993 which imposes a graduated tax rate on the total income of individuals as well as on the income of enterprise, trusts, partnership, settlements and estate of deceased persons.

Capital Gain Tax Act Cap 42, LFN, 1990. This act imposes tax rate of 10% on the gains accruing from the disposal of fixed assets.

Value Added Tax Act, No.102 of 1993 which imposes tax at the rate of either 0% or 5% on the consumption of goods and services. The tax base is on the value added.

Stamp Duties Act, Cap 411, LFN 1990. The act imposes tax on all instruments that require stamping to become legal and to be admissible in a court of law.

Industrial Development (Income Tax Relief) Act, Cap 179 LFN 1990. This act grants income tax relief on companies with a pioneer status.

National Information Technology Development Agency (NITDA) levy 2007. This imposes a 1% tax on the profit before tax (Net profit) on the following companies with a turnover of N100, 000.00 and above.

- GSM and telecommunication companies

-Bank and financial institutions

- Cyber cafes and internet service providers

- Insurance companies

- Pension companies and pension fund administrators

x. Taxes and levies (approved list for collection) Act No.21, 1998. This act clearly defined the taxes operating in Nigeria outline the taxes collectable by each tier of government within the federation.

The Nigerian Tax Administration

The tax administration in Nigeria is a function of the three tiers of government. Each tier of government set up its own machinery to ensure the effective collection of taxes within its jurisdiction.

At the federal level, the organ of tax administration is Federal Inland Revenue Service. The FIRS collects taxes under the jurisdiction of the federal government. Under the structure of the FIRS, there is a Technical Committee (Telcom) which considers all tax matters that require technical and professional expertise and give appropriate advice.

At the state level, there is a State Board of Internal Revenue (SBIR) for each state in the federation. The SBIR is responsible for collecting the taxes under the jurisdiction of the state. Each SBIR also has a technical committee as obtainable under the FIRS. At the state level, there is a Joint Revenue Committee responsible for implementing decisions of the Joint Tax Board (JTB) and also advising the state and local government on revenue matters.

The local Government Revenue Committee is charged with the responsibility of assessment and collection of all fines and rates under the jurisdiction of Local Government Councils.

Tax Type and Tax Jurisdiction

The assignments of fiscal instrument in Nigeria were guided by constitutional provision. The federal constitution gave the federal government exclusive power to collect levies like customs and excise, company tax, education tax and mining rents, VAT etc. All these revenues (with the exception of education tax) are paid into the federation account for distribution among the three tiers of government in line with national constitution. The states and

local governments are left with the powers to collect other fees. The main types of tax revenue for the Federal and sub-national government are listed in Table 2.1.

Table 1: Nigeria's Federal, State and Local Tax Jurisdiction and Assignment.

S/N	**Tax**	**Legal Jurisdiction**	**Collection**
1	Import duties	Federal	Federal
2	Excise duties	Federal	Federal
3	Export duties	Federal	Federal
4	Mining rents & royalty	Federal	Federal
5	Petroleum profits tax	Federal	Federal
6	Capital gains tax	Federal	Federal/State
7	Personal income tax (other than listed in 8)	Federal	State
8	Personal income tax: armed &police forces, external affairs officers, non residents, residents of the Federal Capital Territory	Federal	Federal
9	Value added tax	Federal	Federal
10	Companies' income tax	Federal	Federal
11	Stamp duties	Federal	Federal/State
12	Gift tax	Federal	State
13	withholding tax	Federal	Federal

13	Property tax and ratings	State	State/Local
14	Licenses and fees	Local	Local
15	Motor park dues	local	Local
16	Motor vehicle	State	Local
17	Capital transfer tax (CTT)	Federal	State
18	Pools betting and other betting taxes	State	State
19	Entertainment tax	State	State
20	Land registration and survey fees	State	State
21	Market and trading license and fees	State	Local

Source: Federal Inland Revenue Service (2014)

Unique Taxpayer Identification Number

As an effort and commitment of Nigerian tax authorities to increase the revenue generation and eliminate the leakage of the taxes through evasion, the Federal Inland Revenue Services (FIRS) introduce a program called Unique Taxpayer Identification Number (U-TIN). The program is one of the basic steps set in the tax administration process to have a data base of all registered taxpayers in the country. The program was recorded as one of the mechanism toward having a pool of taxpayers' registration and proper unique identification. Nevertheless, in order to certify the effective application of this scheme of registration, there is a need for clear thoughtful of the concept and idea behind its introduction. The main and paramount contextual to the institution of U-TIN in Nigerian tax system was the necessity to change the registration of taxpayers in the country from a manual process which is uncoordinated to an electronic or computerized, structured, harmonized and coordinated system. The former (which is manual) system was unreliable, boring, cumbersome and posed a main challenge to tax authorities as well as taxpayers. Thus, there was a need from the authorities to substitute that old

system with a new modernizes and more effective system which is additionally taxpayer friendly.

The basic idea of U-TIN is to provide harmonized and coordinated taxpayer identification system that is based on computerized system and easily accessible to all relevant stakeholders' perspective Ayodeji (2014). It is a collective and integrated system for taxpayer's identification throughout the country and would incorporate a database meant for all registered taxpayers at both the Federal and State level (local government is under state registration). This program would generate proper linkages within tax authorities (Federal and State) and yield cooperation and information dissemination about taxpayers thus, led to better compliance by taxpayers Ayodeji, (2014). The followings are some of the benefits of the U-TIN system in Nigeria such as:

* Minimizing the cost and time needed for tax compliance from taxpayer by tax authorities.

* Having a single and effective taxpayer's data base for federal and state level.

* Expansion of tax system which is useful for national security and social planning purposes.

* A friendly tax system that is well coordinated and accessible to all stakeholders.

* Modernizes an efficient way of assessing and detecting taxpayer defaulters.

* Increase voluntary compliance and discourage tax evasion.

It is anticipated that with the introduction of the program Governments and tax authorities at all levels shall collaborate to ensure the positive implementation and the evenly establishment of U-TIN system in Nigeria, in relations to funding, platforms and personnel for the organization of the system, nationwide.

Empirical literature

The previous studies in the performance of tax systems on economic growth, (Ogbonna and Apph (2016); Oseni (2015); Ogoun (2014), considered the role of effective and efficient tax administration considering various scales of

enterprises as an engine of growth. Independently both studies acknowledge the need for strong institutional framework powered by the information technology. Due to the lack of weak administrative system some economies have experienced the declining benefit taxes.

Studies in the adverse consequences of limited tax components and the evasion of identified taxes such personal income taxes (Kenedy and Alade; 2014); (Oboh, Y and Isa 2013), are clear on stand that that high tax rates, poor relationship between tax payers and tax authority and weak tax penalties are disincentives to tax compliance. As such the education of the general public would suffice to maintain a healthy relationship between economic agents and thus would foster voluntary compliance

Methodology

The framework for this study is anchored on the Keynesian theory. According to the Keynesian model, an increase in government expenditure accelerates economic growth and taxation as an instrument of fiscal policy can be used to stimulate the economy therefore, contributes to economic growth.

Discussion of variable and their functional relationship

Gross Domestic Product (GDP) - This is the monetary value of the final goods and services produced within a country's border in a specific period of time. GDP is adopted as a dependent variable in the model as a proxy for economic growth. GDP is used since the figure will either increase or decrease each year showing positive or negative growth.

Petroleum Profits Tax (PPT): PPT is imposed on all companies engaged in the extraction and transportation of petroleum products in Nigeria. It is a major source of revenue to the federal government. Petroleum Profit Tax is expected to show a positive relationship with GDP. This is because increase in PPT will lead to increase in GDP.

Company Income Tax (CIT): Company Income Tax is a tax imposed on the profit or gain of any company accruing in, derived from, brought into, earned in or received in Nigeria. It is expected to show a negative with GDP. This is because an increase in CIT will increase cost of production of companies thereby reduces output and GDP.

Custom and Excise Duties (CED): This type of tax is imposed on the importation of good into the country and manufacturing of goods within the Government territory. It is a source of income to the government and it is expected to show a positive relationship with GDP

Value Added Tax (VAT) - This is a form of taxation imposed on the value added at each stage of production process. VAT is a consumption tax and it is expected to show a negative relationship with consumption and GDP.

Model Specification

The study employed Gross Domestic Product as the proxy for the Nigerian economy and also identified the proxies for taxation which includes Petroleum Profit Tax, Company Income Tax, Custom and Excise Duties, Value Added Tax in order to evaluate the relationship and impact of tax revenue on economic growth in Nigeria. This follows the work of Salami, Apelogun, Omidiya and Ojoye (2015). The work presents the models as follows:

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

The structural form is expressed as

$$gdp = \alpha_0 + \alpha_1 ppt + \alpha_2 cit + \alpha_3 ced + \alpha_4 vat + u_t$$

The lower case letters represent the logarithmic transformation

Where,

GDP	=	Gross Domestic Product
PPT	=	Petroleum Profit Tax
CIT	=	Company Income Tax
CED	=	Custom and Excise Duties
VAT	=	Value Added Tax
a_o	=	Intercept or constant term
$a_1 - a_4$	=	Coefficient of the explanatory variables
log	=	Natural logarithm notation
μt	=	Error term.

Empirical analysis

The empirical analysis provides insight on the data required, sources and method of the data collection, data analysis techniques and some test comprising both statistical and diagnosis test

Type and Sources of Data

The data needed for the model are;

Gross Domestic Product (GDP)	1981 – 2015
Petroleum Profit Tax (PPT)	1981 – 2015
Company Income Tax (CIT)	1981 - 2015
Custom and Excise Duties (CED)	1981 -2015
Value Added Tax (VAT)	1994 – 2015

The sources of these data are the Central Bank of Nigeria (CBN) statistical bulletin for various years, National Bureau of Statistics (NBS) and the Federal Inland Revenue Service (FIRS) published report.

Method of data analysis

In the course of analyzing the data obtained, the study employed Ordinary Least Squares (OLS) estimation approach to evaluate the relationship and the impact among the variables under investigation. The OLS method was employed because of its BLUE properties and minimum variance ensure the facilitation of the process of estimation, produces values that are true in a large sample and have smaller variance compared to other methods. Based on the observation from the OLS result, the study determined whether further test will be carried out.

Table 2 Descriptive Statistics Result

	LNGDP	LNPPT	LNCIT	LNCED	VAT
Mean	8.096895	11.87356	10.43472	9.836381	174932.1
Median	8.343600	11.36890	10.44107	9.688418	36293.47
Maximum	11.47336	15.34318	14.02698	13.79659	867737.1

Minimum	4.348544	4.507669	4.458653	3.640544	14.07997
Std. Dev.	2.207895	2.423227	2.243596	2.401964	251257.6
Skewness	-0.106463	-0.314627	-0.102658	-0.402807	1.439543
Kurtosis	1.737677	2.166478	2.041654	2.400536	3.750765
Jarque-Bera	9.559652	6.362538	5.603397	5.882168	51.64124
Probability	0.008397	0.041533	0.060707	0.052808	0.000000
Sum	1133.565	1662.299	1460.860	1377.093	24490500
Sum Sq. Dev.	677.5971	816.2124	699.6877	801.9507	8.78E+12
Observations	35	35	35	35	35

Source: Researcher's computation from E-views 9.

Table 3.1 above shows the descriptive statistics of the model. The mean of variables GDP, PPT, CIT, CED, and VAT are 8.096895, 11.87356, 10.43472, 9.836381 and 174932.1 respectively. The median of GDP, PPT, CIT, CED, and VAT are as follows 8.343600, 11.36890, 10.44107, 9.688418, and 36293.47. Also the minimum and maximum values of GDP, PPT, CIT, CED, and VAT ranges from 4.348544 to 11.47336, 4.507669 to 15.34318, 4.458653 to 14.02698, 3.640544 to 13.79659 and 14.07997 to 867737.1 respectively. The standard deviation of GDP, PPT, CIT, CED, and VAT which measures the series spread around its mean are 2.207895, 2.423227, 2.243596, 2.401964 and 251257.6 The skewness show that GDP, PPT, CIT and CED are negatively skewed with values -0.106463,-0.314627, -0.102658, -0.402807 respectively while VAT with value 1.439543 tailed to the right. The Kurtosis which show the peak of GDP, PPT, CIT, CED and VAT are 1.737677, 2.166478, 2.041654, 2.400536, 3.750765 respectively. The probability value of the Jarque-Bera statistic indicates that GDP, PPT, CED and VAT are normally distributed at 5% level of significance except CIT.

Results

Table 3: Static Ordinary Least Square Estimates

Dependent Variable: LNGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNPPT	0.223991	0.038315	5.846050	0.0000
LNCIT	0.349353	0.044439	7.861378	0.0000
LNCED	0.002718	0.018199	0.149324	0.8815
VAT	5.95E-07	3.09E-07	1.926512	0.0561
TIME	0.026334	0.001914	13.75817	0.0000
R-squared = 0.970754, Adjusted R-squared = 0.969888. Durbin-Watson stat = 0.748936				

Source: Researcher's Computation

From the static regression above, it is observed from the coefficients that Petroleum Profit Tax (PPT) Company Income Tax (CIT), Custom and Excise Duties (CED) and Value Added Tax are positively related with the dependent variable (GDP). The P-value indicates that PPT is statistically significant at 5% level and that a 1% increase in PPT will result to about 22 percent increase in GDP. Also, CIT is statistically significant level at 5% which indicates that a 1% increase in CIT will cause GDP to increase with about 35 percent. Furthermore, CED and VAT exert a statistically insignificant influence on GDP at 5% level while The t statistics for Time variable indicates a significant upward trending pattern. Therefore, the data has to be detrended for further analysis. The coefficient of determination (0.970) and the adjusted R- square (0.969) reveals that the explanatory variables accounted for about 97 percent variations in the dependent variable. The DW-statistic (0.748936) shows presence of serial correlation in the model. Based on the existence of serial correlation in the model, further test will be carried out to test the stationarity of the variables and also test for the presence of long run relationship among the variables under review.

Engel and Granger Residual Cointegration test

Table 4: **Test Performed on the Residual of the Static OLS Equation**

Null Hypothesis: RESID03 has a unit root

Exogenous: Constant, Linear Trend

Bandwidth: 10 (Newey West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-6.762916	0.0000
Test critical values 1% level	-4.025426	
5% level	-3.442474	
10% level	-3.145882	

Source: Researcher's computation from Eviews 9

The above table shows the residual two step cointegration ala Engel and Granger methodology. The linear combination of the integrated variable result to a stationary process as confirm by the unit root test on the residuals of the static equation above. The null of non stationarity failed to be accepted at 5% level of significance using the PP test. This establishes the presence of long run relationships among the variables under review, there is a long run relationship between Gross Domestic Product, Petroleum Profit Tax, Company Income Tax Custom and Excise Duties and Value Added Tax.

Error Correction Model

Base on the empirical evidence of cointegration among the variables, the Granger Representation Theorem proposed by Engel and Granger (1987)

requires that dynamic relationship among the variables can be expressed with an error correction model (ECM).

Table 4.3 Error Correction Model (ECM).

Dependent Variable: D(LNGDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNPPT)	0.056455	0.025150	2.244736	0.0264
D(LNCIT)	0.124957	0.030295	4.124695	0.0001
D(LNCED)	0.018417	0.015530	1.185890	0.2378
D(VAT)	1.09E-07	5.35E-07	0.204043	0.8386
ECM(-1)	-0.310897	0.053028	-5.862927	0.0000
TIME	0.000619	0.000450	1.375214	0.1714
C	-0.015264	0.036677	-0.416170	0.6780
R-squared = 0.320260, Adjusted R-squared = 0.289362				

Source: Researcher's Computation from Eviews 9

Table 4.3 shows the ECM estimates. It was uncovered from the result that Petroleum Profit Tax (PPT) has a significant positive effect on Gross domestic product. The result indicates that a 5 percent increase in PPT will result to about 5 percent increase in GDP. This finding is welcoming and it suggests that PPT is instrumental to the growth of Nigerian economy. Company Income Tax (CIT) also indicates a significant positive relationship with GDP. The result shows that a percentage increase in CIT will lead to about 12 percent increase in GDP. The coefficient of Custom and Excise Duties (CED) indicates that CED is statistically insignificant at 5 percent level and Value Added Tax (VAT) also exerts an insignificant impact on GDP at 5 percent level. The parameter estimate of the ECM is rightly signed and significant at 5 percent significance level. The coefficient suggests that a temporary deviation in the system is reconciled at the speed of 31 percent. The coefficient of

determination (0.32) reveals that the explanatory variables accounted for about 32 percent variations in the dependent variable while other variables not captured in the model accounted for about 68 percent variation in the dependent variable.

Other Robustness Test Results

Table 5 Test for Autocorrelation

F-statistic = 0.059229	Prob. F(1,131) = 0.8081
Obs*R-squared = 0.062817	Prob. Chi-Square(1) = 0.8021

Source: Researcher's computation from Eviews 9

The Table 4.3.4 above depicts the Breusch-Godfrey Serial Correlation LM test for the presence of autocorrelation.The result of the test reveals that the p-value of about 0.80% is greater than the critical value of 0.05%. This shows the non existence of autocorrelation.

Table 6 Test for Heteroscedasticity

F-statistic = 0.031909	Prob. F(6,132) = 0.8591
Obs*R-squared = 0.033403	Prob. Chi-Square(6) = 0.8550

Source: Researcher's computation from Eviews 9

The table above shows the ARCH test for heteroscedasticity to test whether constant variance exists. The table reveals that the p-value of about 85% is greater than the critical value of 5%. This shows that there is no evidence for the presence of heteroscedasticity. The study therefore fails to accept the null hypothesis.

Summary of Findings.

Summarily, the finding showed that:-

The contribution of Petroleum Profit Tax to gross domestic product is positive and significant over the years and a further increase will result to a rise in

gross domestic product. This shows that PPT is vital to the growth of the Nigerian economy. Therefore, the government and the Institution in charge of tax collection should ensure that companies dealing with petroleum both in downstream and upstream should not avoid or evade tax. The study fails to accept the null hypothesis which state that PPT as a component of taxation has no significant impact on GDP. This result agrees with the findings of Ogbonna and Ebimobowei (2012)

Company income tax (CIT) also depicts a similar result as PPT but contributes more to GDP when compared with PPT. It signifies that taxes realized from companies in Nigeria contribute positively to the growth of the Nigerian economy. Therefore, the study fails to accept the null hypothesis that CIT has no significant impact on GDP. The result here does not agree with the study conducted by Ifurueze and Ekezie (2014). However, it agrees with Salami et al (2014)

Custom and Excise Duties (CED) as a component of taxation depict a positive but insignificant contribution to GDP. It is expected that the revenue generated from CED should impact more on GDP since Nigeria is import dependant. The insignificant of CED to GDP may be may be as a result of corruption in the system, or porous borders that allow smugglings into the country.

Value Added Tax (VAT) shows a positive insignificant relationship with GDP. This may be as a result of obsolete method of VAT collection, Inability to Prioritize VAT as means of revenue generation or failure to deduct and remit VAT to the body in charge. The study therefore accepts the null hypothesis that VAT has no impact on gross domestic product in Nigeria.

Concluding Remarks

The study assessed tax system and the Nigerian economy from 1981 to 2015. Nigeria's tax system is characterized by complex and inequitable taxation laws, corrupt processes, weak tax assessment and multiplicity of taxes that have limited application in the informal sector that dominates the economy thereby limiting revenue generation and economic growth. For the tax system to be efficient and effective, Proper or adequate tax administration is required so as to generate sufficient revenue to trigger economic growth as it may have

favourable consequences on the systematic stability of the revenue base of the nation at any point in time. The magnitude of this effect depends on specific circumstances of the Nigerian, such as regulatory framework, supervision practices and policy issues. Furthermore, since taxation as a means of revenue generation for the nation, the agencies involved should be strengthened, officials should be well-paid, well-motivated, properly organized, adequately equipped, well-disciplined and professionally inclined.

References

Abiola, J. & Asiweh (2012). Impact of Tax Administration on Government Revenue in Developing Economy-A Case Study of Nigeria. *International Journal of Business and Social Science-The Special Issue on Humanities and Social Science. vol.* 3(8), pp 99-113 *www.ijbssnet.com*.

Adeleke, Salami. (2011). Taxation, Revenue Allocation and Fiscal Federation in Nigeria: Issues, Challenges and Policy Options. *Economic Annals.* Vol vi(189).

Adereti, S.A., & M.R. Sanni , & Adesina J.A .(2011). Value added tax and Economic Growth in Nigeria. *European Journal of Humanities and Social Science*, vol. 10 (1) pp 456-471.

Afberon, D. & Okoye, E. (2014). The impact of revenue generation in Nigeria: A Case Study of Federal Capital Territory and Selected States. *International Journal of Public Administration and Management Research (IJPAMR)*, vol. 2. (2) pp 22-47.

Alpheaus, O E., J.U. Ihendinihu ., & Akpu, U.G. (2016) Personal Income Tax Amendment Act 2011 and Tax Liabilities of Individual Taxpayers in

Nigeria. *International Journal of Economics, Commerce and Management,* vol. (IV) 5 pp 225- 245

Ayodeji, Oyeyinka & Efunboade., (2014), Impact of ICT on Tax Administration in Nigeria. *Computer Engineering and Intelligent System,* vol. 5 (8) pp2629

Bassey, O. U. (2013). Personal income tax in Nigeria. CIBM Publisher Yaba, Lagos.

Brain Van Wyk. Research design and methods part 1

Dickey, D.A. & Fuller, W.A. (1981). Distribution of estimators for autoregressive time series with a unit root. *Econometrica* 49, 240-245.

Egbunike, A.P. & Ezelibe, C.P. (2015). Influence of Manipulated Tax Systemon Aggressive Accounting Practise- Evidence from Stake Holders in South East, Nigeria. *International Journal of Managerial Studies and Research (IJMSR*). Vol. 3(7) pp 54-60.

Enahoro, J.E & Jayeola, (2012). Tax administration and revenue generation of Lagos State government, Nigeria. *Research Journal of Finance and Accounting.* Vol. 3(5)pp 133-139.

Ifurueze, M.S. & C.A Ekezie.,. (2014). The Nigerian Tax System and Economic Growth: A Time Series Analysis. *International Journal of Economics and Empirical Research.* *http://www.fesdo.org/publication.aspx*.

Micah, L.M., E. Chukwuma, & Umobong, A.A. (2012). Tax System in Nigeria- Challenges and The Way Forward. *Research Journal of Finance and Accounting.* Vol.3. (5) pp 9-15.

Modugu, K.P. & Omoye, A.S.O (2014). An Appraisal of Personal Income Tax in Nigeria. *Asain Economic and Financial Review 4(1)* 33-40.

Mura, P., (2015). Tax Composition and Economic Growth: A Panel Model Approach for Eastern Europe. *Annals of the Constantin Brancusi University of Targu Jiu, Economic series*. Issue 1.(ii) pp 89-101.

Nwadialor, E. and A.C. Ekeze . (2015) Productivity of the Nigerian Tax System(1994-2013*). International Journal of Business Administration*, vol.6 (2) pp30-40.

Nwadialor, E. and C.A. Ekezie. (2016). Effect of Tax Policy on Economic Growth in Nigeria (1994-2013). *International Journal of Business Administration.* Vol. 7 (1)pp 50-58.

Oboh, C.S, O. Yeye, & Isa, E.F. (2013). Multiple Tax Practices and Taxpayers' Non Compliance Attitude in Nigeria. *International Research Journal of Finance and Economics.* Issue 103, pp151- 169

Odusola, A. (2006). Tax Policy Reforms in Nigeria. *World Institute for Development Research* ISSN 1810-2611 pp1-43

Ogbonna, G.N. & Appah, E. (2016). Effect of Tax Administration and Revenue on Economic Growth in Nigeria. *Universal Journal on Sustainable Development Research (UJSDR).* Vol. 13 (1) pp 45-59.

Ogbonna, G.N., & Ebimobowei, A. (2012). Impact of Tax Reform and Economic Growth of Nigeria: A Time Series Data Analysis. *Current Research Journal of Social Sciences,* 4(1) pp 62-68.

Ogoun, S. (2014). Effective Tax Administration and Institutionalization of Accounting System in Small and Medium Scale Enterprises: Evidence from Nigeria. *Journal of Empirical Studies,* 1(2) pp 85-97.

Oseni, (2015). Sustenance of Tax Administration by Information and Communication Technology in Nigeria. *Archives of Business Research.*Vol.4 (1) pp 47-54.

Salami, G.O., K.H. Apelogun, O.M. Omidiya & Ojoye, O.F. Taxation and Nigerian Economic Growth (2015). *Research Journal of Finance and Accounting.* Vol.6 (10) pp 93-101.

Umoru, D., & Anyiwe, M.A. (2013) Tax Structure and Economic Growth in Nigeria: Disaggregated Empirical Literature. *Research Journal of Finance and Accounting,* vol. 4(2) pp 65-9.

Usman, S.K.W & Bilyaminu, Y.H. (2013). Taxation and societal Development in Nigeria: Tackling Kano's Hidden Economy. *International Journals of Academic Research in Business and Social Sciences.* Vol. 3(3).

Uzonwanne, M.C., (2015). The indispensible Role of Taxation for State Development in Nigeria. *International Journal for Economic Research. Pp 48-59.*

Zakariya, U.G. & Muzainah, M. (2015). Tax Administration Problems and Prospect: A Case Study of Gombe State. *International Journals of Arts and Commerce.* Vol. 4(4).

THE RESTRUCTURING DEBATE: THE MISSING LINKS IN NIGERIA'S FEDERAL STRUCTURE

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Abstract
This work aim at narrowing the options, identify sectors of priority and the procedure to restructure the Nigeria federation. The work address two issues: (1) the constitutional reforms embarked by the federal government to restructure Nigeria; and (2) to ascertain whether past efforts to restructure have provided answer to the agitation for restructuring. The descriptive survey method of analysis was deployed to analyse returned questionnaires. The purposive sample technique was applied, while the simple percentage, the mean, standard deviation and the z-test are deployed in the analysis. Findings of the research reveal that past efforts in restructuring the Nigerian polity yielded little benefits and have not discouraged the agitation for a more equitable federal structure. The researcher recommends, fiscal restructuring and devolution of powers to the federating units as key to successful restructuring of the Nigerian federation. To achieve this, leaders must have the political will, some parts of the country must not mistake restructuring to balkanization of the country. Debate, seminars and conferences must continue to enlighten citizens on the need to restructure the Nigerian polity through constitutional means.

Keywords: *Restructuring, Federalism, Constitution, Fiscal federalism, Devolution of powers*

Introduction

The word restructuring is multifaceted and mean different things to different people in the political class, the academia, regions and zones that constitute the Federal Republic of Nigeria. While most Nigerians believe that certain aspects of the federal structure need reforms; there is yet no harmony on the direction, modality, sectors and time to restructure. In the restructuring debate, some groups emphasise the fiscal imbalance and resource control, other groups consider the restructuring of the minds of Nigerians, yet some are more

concerned about devolution of powers and lastly those thinking of administrative restructuring.

Obaze (2018) opined that Nigeria must avoid default restructuring. This is to say that restructuring must be adequately planned in order to avoid situations that will result to regrets by Nigerian. In fact, in the view of Obaze; Nigeria as a federation needs restructuring which is based on agreement, formulated carefully not to disintegrate the federating units. The restructuring debate or discuss is as old as the unpopular decision of the British government to pull together the culturally heterogeneous and semi-independent groups of the Niger basin in what was called Amalgamation of 1914. It culminated to the Littleton Federal Constitution (Littleton, 1954). The amalgamation policy of the British administration was not planned, and it had obvious defaults hence, the debate for restructuring rages on.

Mills commented that:

> There should not be any one unit so much more powerful than the rest as to be capable of vying in strength with many of them combined. If there be such one, it must insist on being master of the joint deliberations; if there be two, they will be irresistible when they agree, and whenever they differ, everything will be decided by a struggle for ascendency between the rivals. The size of the unit concerned is - in wealth, area and population - is therefore of prime importance. There must be some sort of reasonable balance which will ensure that all the units can maintain their independence within the sphere allotted to them that no one can dominate the others (Mills, 1901).

The excerpt above indicates some of the important issues in contention with the restructuring debate many years after Nigeria's independence. No doubt, a lot of constitutional and political conferences have been held to stabilize the federation with one reform culminating into further debates about the structure of Nigeria. In a lecture on the occasion of the celebration of Rivers State

Golden Jubilee, Godini (2017) stated that Gowon created the 12 States in 1967 paramountly to achieve structural federalism.

Godini quoted Gowon as saying that:

> …the main obstacle to future stability in this country is the present structural imbalance in the Nigerian federation… This is why the item in the political and administrative programme adopted by the Supreme Military Council… is the creation of States as basis for stability… (Godini, 2017).

It must be noted that between 1976-1978, Murtala Mohammed created more states. Olusegun Obansanjo approved the change from the British parliamentary system to the American presidential system in 1976. Indeed, Olusegun Obasanjo promulgated the Land Use Decree. Akpo writing on the challenges of federalism in Nigeria observed that the introduction of the presidential system of government was to strengthen the local government structure and allow for vertical revenue sharing (Akpo, 2002).

In 1981, Shehu Shagari established the federal character principle in appointments, while Babangida liberalized the economy, cancelled the derivation principle, created the Federal Revenue Mobilization and Fiscal Commission, and the two party system. Abacha created 6 additional states and local governments, while Abdusalami drafted the 1979 Constitution and removed the local government autonomy. Obasanjo in his civil rule, restored the 13 per cent derivation for mineral producing states, created Ministry of Niger Delta. Jonathan, 2010-2015, midwifed the 2014 National Conference. In his inauguration address, the former President highlighted the issues of the national conference as:

> The form of government, structures of government, devolution of powers, revenue sharing, resource control, State creation, State police and fiscal federalism, indigeneship, gender equality and children rights… (Godini, 2017).

Today the debate for restructuring seems not to abate, particularly now that part of the conservative north have joined the fray. Opinion leaders like Balarabe Musa, Paul Unongo, Dr. Junaid Mohammed, Tanko Yakassai, Bashir Dalhatu all from the north are now apostles of restructuring. Steven (2017) also observed that Atiku while launching the Daily Stream Newspaper had in fact listed certain items he must focus to restructure Nigeria. These include devolution of powers to the States, reduction in federal government exclusive list (87) and favouring concurrent list (15). The restructuring will also include developing an indigenous model of fiscal federalism, autonomy of the local governments, state police and resource control. Atiku also emphasized on restructuring administratively. In fact, from Atiku's point of view, the debate on restructuring had not abated. It therefore, needs to be resolved.

Just as the debate gets more intense and interesting, there is the need to position, enlighten and assist individuals and groups get qualitative information. The essence is to also make stakeholders understand the main issues in the contention for restructuring. The Northern part of Nigeria will not oppose restructuring if it is the only condition for development. President Buhari is indeed confronted with this age-long debate. He commented that too many people talking lazily about restructuring in Nigeria, showing that not even the president has full grasp of restructuring in the Nigeria context.

The Vice President of Nigeria had his view on the debate of restructuring which seem contrary to the position of the President. To Osinbajo, restructuring Nigeria would involve devolution of powers to the federating units to enable them control their own administrative decisions, such as the creation of councils and community police including special courts. The vice president in essence did not reject restructuring strictly speaking (Augustine and Mordi, 2018).

Adebayo (2017) posits that what is needed to be structured is the mindset of Nigerians and he referred to it as the mother of all restructuring. As condition to the survival of Nigerian state, the restructuring debate must be narrowed, focused and items to restructure must be carefully presented.

This work addresses two basic questions. What are the constitutional reforms embarked upon by the various administrations to address the question of fiscal imbalance and devolution of powers in Nigeria? Has restructuring efforts in the past provided answers to the agitation for fiscal federalism and devolution of powers in Nigeria?

This paper is divided into six parts. The second part is the conceptual framework, the third is the literature review, the fourth is the methods of analysis while the fifth is the data presentation and analysis and finally we have conclusion and recommendations.

Conceptual Clarifications

Restructuring

The Black's Law Dictionary defined restructuring as a fundamental and sometimes drastic change that will alter the relationships within a company or with other companies. The Oxford Advanced Learner's Dictionary, describe restructuring as, the re-organize of something such as a system or a company in a new and different way. This implies that restructuring of a body polity such as Nigeria will involve changing the system to achieve a smooth, but effective system of administration and governance. The concept of restructuring was summarized by the former President, Goodluck Ebele Jonathan in his opening address to members of the 2014 National Conference at Abuja. He said the issues involved are;

> …the form of government, structures of government, Devolution of powers, Revenue sharing, Resource control, State creation, State police and Fiscal federalism, Indigeneship, Gender equality and Children's right… (Obaze, 2018).

Restructuring implies fundamental alteration in the aforementioned issues and related matters. The aim is to produce a more enduring and practical federal structure that will liberate the materials and manpower resources that nature has endowed Nigeria.

Restructuring however is in different forms. They are Fiscal restructuring, Administrative restructuring, Geographical/regional restructuring, Devolution of powers from the centre to the federating units and mindset restructuring.

Fiscal restructuring refers to economic/resource control and sharing among the various tiers of government in a federation. Mimiko (2018), writing on fiscal federalism and restructuring in Nigeria, observe that in federal system, the federating units exploit their resources and pay tax for the maintenance of the government at the centre.

Administrative restructuring connotes policy adjustments/changes in the various sectors of the federation. Geographical/regional restructuring involves delineation of geopolitical boundaries in a federation. It is on this premise that Moghalu (2018) opined that trade, manufacturing and investment will flourish across the regions if Nigeria is restructured.

Devolution of powers is the division of powers among the federating units, and coordinates supremacy of the various tiers with their constitutional functions.

Restructuring of the human minds in this context, is the mind-set of Nigerians about Nigerian State, their affiliation, sense of belonging and patriotism is called to question. Eliciting through national orientation, equality of opportunities among citizens, will go a long way to arouse in citizens the sense of nationhood and patriotism.

The indispensability to restructuring Nigerian federation, hinges on a number of reasons: The security implications, competitiveness among the federating units, education, agitation/militancy, education and protection of minority rights (Ogih, 2017).

Fiscal Federalism

Fiscal federalism is a by-product of federalism. Federalism is a concept in which power to govern is shared between the centre and federating units creating what is often called a federation. It is a political theory that is multifaceted, varies in ecology and dynamic in practice. Federalism implies

that each tier of government is coordinate and independent in its own areas of authority and should also have required taxing powers to exploit its independent sources of revenue. Fiscal federalism requires that each level of government should have adequate resources to perform its functions without resorting to the other level of government for financial assistance (Akpo, 2002).

For any federal system to be sustained there must be fiscal decentralization and financial autonomy. Fiscal decentralization means delegating decision-making to lower levels of government instead of concentrating it at the centre. The federating units should be free to take decisions and allocate resources according to its own priorities in its own area of jurisdiction. In addition, the federating units should be able to act without interference on matters within their own areas of authority.

Understanding which responsibilities and instruments are best centralized and which are best placed within powers of the federating units is very important. Fiscal federalism is a general normative framework for the assignment of functions to the different levels of government and appropriate fiscal instruments for carrying out these functions. It is a set of guidelines that assist in designing fiscal relations between the national and the governments of the federating units, while fiscal decentralization is the process of applying such guidelines. Put differently, federalism is the division of public sector functions and finances among different levels of government. Fiscal federalism is thus characterized by fiscal relations between the central and lower levels of government. The fiscal relationship between the federating units is explained in terms of three main theories, namely, the theory of fiscal relation. This theory discusses the functions expected to be performed by each level of government in the fiscal allocation. The theory of interjurisdictional cooperation; examines areas of shared responsibility by the centre and the federating units, and local governments, and the theory of multijurisdictional community. In this case, each tiers of government provides services whose benefits will accrue to people within its boundaries.

Devolution of Powers

Devolution of powers can be described as division of powers among tiers of government and coordinate supremacy of the two levels of government with respect to their constitutional functions which is important to efficient functioning of a federal system.

Division of powers in a federal State must be inserted in the constitution; Wheare (1971) advanced three major reasons for legal underpinning of power divisions among the tiers of governments in federalism.

> Since federal government involves a division of functions, and since the State forming the federation are anxious that they should not surrender more powers than they know, it is essential for a federal government that there be a written constitution embodying all governmental authorities throughout the federation. To further consolidate the division of powers between the tiers of government, the power to amend the federal constitution must lie in the hands of both the government at the centre and the federating units. Lastly, in the case of dispute between the centre and the State governments as to the extent of power allocated to them under the constitution, there is need to have apex court to adjudicate on such disputes.

In the Nigerian context, the question of power relationship between the federal government and federating units has become a thing of concern. The fact is that contrary to the classical principle of 'coordinate power' in a federal system, the government at the centre in Nigeria has been increasingly encroaching on the sphere of powers of the State. This trend has continued because the Nigerian federal structure is lopsided and has enormous powers at the centre that hold for itself, a greater percentage of share of the national revenue and allocates it through the parochial and unimaginative prism of its fatherly attitude.

The situation is made worse when it comes to issues of financial relationship between the federal and the State governments; the federal retains more

resources. The federating units lack instruments and powers to raise money for its developmental projects and maintenance.

Dare (1979) puts it in perspective when he argues that:

> If the government authorities in a federation are to be really co-ordinate with each other in actual practice as well as in law, it is essential that there should be available to each of them, under its own unfettered control, financial resources sufficient for the performance of the functions assigned to it under the constitution.

It is only when powers is devolved to the federating units that the States will be able to raise the needed taxes, and exploit its natural resources to fund its government and projects for the good of the people.

Theoretical Framework

The theory of fiscal federalism was propounded by Kenneth Arrow, Richard Musgrava and Paul Samuelson. According to Musgrave (1989), the government have critical role to play in economic development, hence the need for fiscal equalization in a federal system. To achieve economic growth in a federation, there is need for lump sum transfer of resources from the central government to the federating units. Equalization is in two aspects; the first is based on Efficiency Criteria. Efficiency Criteria considers equalization as a way of correcting for distorted migration patterns as well as provide assistance to poorer regions or jurisdictions. Equalization is an important convention in the Canadian federal system of government.

There are demerits of decentralization in a federal system. These are some of the reasons that limit growth in governments, particularly in the developing countries. Scholars have argued that corruption may be more common at the local level, than at the national level, especially in the developing countries. Reasons being that the absence of arms length relationships is assumed to be more pronounced at the local level. But by virtue of their limited powers, it is difficult for local officials to engage in enormous corruption schemes, whereas a corrupt minister of a central government may be able to do massive harm.

The logic applies to Nigeria where the local councils are assigned limited funds to execute their projects; moreso the fund comes to council at the mercy of the state governors. This explains why councils in Nigeria have limited corrupt cases compared to the state and the federal government. Quality of local bureaucracies is another argument raised against resource decentralization in a federal system.

The federal government attracts more qualified personnel, because it offer better careers and remunerations. The limited number of local bureaucrats, is a major constraint to decentralized government. Other factors that negatively affect decentralization especially at the lower levels governments; include lack of facilities and manpower that can plan and generate the needed revenue to sustain its own budget. There is also the challenge of regulatory guidelines in areas of expenditure, particularly in auditing the local governments to achieve accountability and good governance.

Fiscal federalism, under which provision of public goods is decentralized to subnational governments, allows for public-goods to be tailored to suit the preferences of a non-homogenous population. This beneficial outcome is achieved via sorting of individuals into demand-homogeneous jurisdictions, each of which provides a different amount of public good, The drawbacks of federalism, which have also been noted in the literature, include the sacrifice of large scale economies due to smaller jurisdictive sizes, losses from interjurisdictional tax competition when government revenue comes from taxation of a mobile tax base, and failure to properly account for public-good spillovers across jurisdictions all constitute draw-backs to resource decentralization in a federal system of government (Ekpebu, 2008).

The function of government is categorized into: Macroeconomic Stabilization, Income Redistribution, and Resource Allocation. There seems to be a consensus about assigning the first two functions, Stabilization and Redistribution, to the Central government. But its been argued that at the subnational level fiscal policymaking jeopardizes macroeconomic stability. But the gains from fiscal decentralization in a federal system cannot be overemphasized.

The argument in favour of decentralization stems from motivation for enhanced efficiency, accountability, and autonomy. A representative government works best when it is closer to the people. Carrying the argument further, A. Shleifer formulates the decentralization theorem. He said each public service should be provided by the jurisdiction having control over the minimum geographic area that would internalize benefits and costs of such provision.

It is argued that the correlation coefficient between local governments spending and GDP partly supports decentralization theorem. In the developed countries, where local governments are more responsive to constituents, there is a high positive correlation between GDP per capita and local government spending. On the other hand, in developing countries, the correlation coefficient is very low, even negative.

Again, that the policies of subnational branches of governments should be permitted to differ in order to reflect the preferences of their residents. In this analysis, local governments have better information about their residents needs therefore they can use public resources more effectively than central government. A decentralized system is expected to respond better to local preferences and needs, promote competition among local units in the provision of public goods and services. Efficiency improves as supply adjusts to demand (Yilmaz, 2012).

It is observed, that if greater decentralization increases the number of alternative fiscal jurisdictions, any attempt to increase tax rates in one jurisdiction would result in migration of its residents to another jurisdiction. Taxpayers migrate to alternative jurisdictions in order to avoid higher taxes and interjurisdictional competition limits excessive taxing power of the governments.

The classic administrative view of government fragmentation is that it would cause uncoordinated service delivery, loss of economies of scale, deterioration of accessibility and accountability, and private interests making key public decisions.. Also, the literature on intergovernmental relations pays attention to

cooperation among levels of government. Traditionally, public economists also argue that interjurisdictional competition to retain and attract residents and businesses is at best a zero-sum game.

Decentralization in practice appears to have a mixed track record, and countries such as Brazil, Argentina, and Nigeria are cases in point. For example, they argue that decentralization can increase interregional disparities because national policies designed to connect disparities will be limited, or decentralization might lead to the under provision of fiscally induced stabilization policies.

The History of Nigeria's Constitutional Development

Federalism in Nigeria can be traced to the Macpherson Constitution of 1951. The 1951 Constitution was a clean break from the Richards Constitution of 1946, which enthroned the principle of Regionalism. The centre was divested almost completely of any powers in contradistinction to the Regions, which thus became major political players in the administration of pre-independence Nigeria. Under the 1951 Constitution, the Regional houses were given powers to legislate on certain items, the executive councils were also given the power to implement on some matters. It is the clear set-up of the regions with powers in political and administrative matters that signals the evolution of federalism in Nigeria. The 1951 Constitution was a watershed in federal constitution, with representatives of government from the people and therefore legislations truly from the people's representatives.

Macpherson Constitution of 1951

The important propositions of the Macpherson Constitution includes: Increased Regional autonomy within a united Nigeria; larger and more representative legislature with wider powers to be created both in the Regions and at the centre. In other words, political, administrative and legislative powers were devolved to the Regions from the central Government. Nigerians, were to form the majority in each legislative house to be given full share in the responsibility of shaping government policies and in the direction of executive action.

Akpo, quoting Anyanwu (1999), noted that:

> Through nationalist pressure and colonialist accommodation, the Macpherson Constitution attempted to correct some errors in the Richards Constitution. Under the Macpherson Constitution, the Regional Houses of Assembly were, for the first time, given legislative authority on certain matters. Executive authority was also assigned to the regions on matters within their legislative competence. This necessitated the creation of executive Councils in the regions, a structure which had been instituted in the centre since the colonization of Lagos. The political and administrative institutionalization of the regions enhanced the evolution of a federal structure in Nigeria.

With the fundamental reforms of the Macpherson Constitution, the federal system of government was set to take off in Nigeria. The regional houses were for the first time given legislative authority, while the executive powers were given the regions on matters within their legislative competence. Other federal characteristics of the 1951 Constitution includes:

i. The establishment of a Supreme Court for the Federation of Nigeria to be known as the Federal Supreme Court. It replaced the old Supreme Court established as far back as 1934 in a unitary system of government. The new Supreme Court was to be essentially a Court exercising an appellate jurisdiction hearing appeals from the Regional High Courts. In that respect, it replaced the old West African Court of Appeal hitherto a Court of Appeal for all British West African Colonies of the Gambia, Sierra Leone, The Gold Coast and Nigeria. The Supreme Court was essentially a Nigerian Court. It had original jurisdiction on constitutional matters referred to it. The Chief Justice of Nigeria was the President of the Supreme Court;
ii. There was also established a High Court for each of the three Regions of the Northern, the Western and the Eastern; a Regional Judiciary each with a Chief Justice and a Judicial Service Commission with a

full complement of Judges. The Chief Justice of a Region was appointed by the Regional Governor after consultation with the Chief Justice of the Federation of Nigeria;

iii. There was also in each Region the Regional Magistracy as well as the Customary Courts establishment which were regarded as falling within the residue of powers and functions;

iv. There were set up Public Service Commissions both for the Federation and for each of the Regions. It was the duty of the Commission to recruit personnel for the Services in the Federation in the case of the Federation; and in the Regions in the case of each Regional Commission.

v. On the basis of Montesquieu's doctrine of separation of powers, there was created separation of powers between the legislature and the judiciary.

vi. Each Region was granted a kind of regional autonomy. Consequently, each Region was treated as a separate, independent country, which had willingly surrendered part of its sovereignty to the central or federal government and its legislature.

It is worthy to note that minority leaders stood firmly against the abandonment of devolution of powers and function from the centre to the Regions. This is still the basis upon which the recent clamour for true federalism in Nigeria is founded. No doubt in order to achieve true federalism, there must be substantial devolution of powers and functions from the centre to the States in a federation.

The Lyttleton Constitution of 1954

The 1954 Lyttleton Constitution concretized the fundamentals of true federalism in Nigeria. The Constitution granted each Region its autonomy from the powerful centre. The Regions were treated as separate, independent countries, which willingly surrendered part of their sovereignties to the centre. This is the principle of true federalism and it is the pillar upon which the federal structures of true federations were all built. Examples are the United States of America, the Canadian Union, Australia, India and Pakistan. According to Anyanwu (1999),

> The Constitution was a product of the 1953 London Constitutional Conferences, in which Nigerians participated actively, and the Lagos Conference of 1954, which involved all political parties in Nigeria, and the Secretary of the State. It was the Lyttleton Constitution, which made Nigeria truly Federation. The Federal System had positive implication for the development of a bi-cameral legislature at the federal level. The Constitution for the first time provided for residual, the executive, and the concurrent lists.

Some of the features that pointed towards federalism under the 1954 Constitution are:

(i) There was established a Supreme Court for the Federation of Nigeria to be known as the Federal Supreme Court. It replaced the old Supreme Court established as far back as 1934 in a unitary system of government. The new Supreme Court was to be essentially a Court exercising an appellate jurisdiction hearing appeals from the Regional High Courts. In that respect, it replaced the old West African Court of Appeal hitherto a Court of Appeal for all British West African Colonies of the Gambia, Sierra Leone, The Gold Coast and Nigeria. The Supreme Court was essentially a Nigerian Court. It had original jurisdiction on constitutional matters referred to it. The Chief Justice of Nigeria was the President of the Supreme Court.

(ii) There was also established a High Court for each of the three Regions of the Northern, the Western and Eastern; a Regional Judiciary each with a Chief Justice and a Judicial Service Commission with a full complement of Judges. The Chief Justice of a Region was appointed by the Regional Governor after consultation with the Chief Justice of the Federation of Nigeria.

(iii) There was also in each Region the Regional Magistracy as well as the Customary Courts establishment which were regarded as falling within the residue of powers and functions.

(iv) There was set up Public Service Commissions both for the Federation and for each of the Regions. It was the duty of the Commission to recruit personnel for the Services in the Federation in the case of the

Federation; and in the Regions in the case of each Regional Commission.

(v) On the basis of Montesquieu's doctrine of separation of powers, there was created separation of powers between the legislature and the judiciary.

(vi) Each Region was granted a kind of regional autonomy. Consequently, each Region was treated as a separate, independent country, which had willingly surrendered part of its sovereignty to the central or federal government and its legislature.

To achieve true federalism, there must be substantial devolution of powers and functions from the centre to the States in a federation.

Adebayo noted that:

> By 1954, when the Lyttleton Constitution emerged, a federal system of government was adopted by consensus. The Constitution among other things, guaranteed the sharing of power between the centre and the federating regions. It also recognized each set of authorities as co-ordinates (with the centre) and not subordinates.

The 1960 Constitution and Federalism

In order to have a firm grasp of the extent of federalism in any country or nation that operates a written Constitution, it is imperative to first examine the Exclusive Legislative List, Concurrent Legislative List and where applicable, the Residual List of the Constitution.

In simple terms, the Exclusive Legislative List relates and deals on matters exclusively reserved for the Federal Government of the country. The Concurrent Legislative List is concerned with equal power sharing between the Federal and States; whilst the Residual List is usually reserved for the States. Upon a careful and holistic perusal of the provisions of the 1960 Constitution, it is very lucid that the colonial masters succeeded more than ourselves in enthroning true federalism in Nigeria before their exit.

The 1951, 54 and 1960 Nigerian Constitutions satisfied the minimum requirements for a federation. According to Nwabueze ( ),

> Federation is an arrangement whereby powers of government within a country are shared between a national, country-.wide government and a number of regionalized (i.e. territorially localized) governments in such a way that each as a government separate and independently form the others operating directly on persons and property within its territorial area, with a will of its own apparatus for the conduct of its affairs and with an authority in some matters exclusive of all the others.

The 1960 Constitution guaranteed Regional Constitutions, census, arms and ammunition, Control and voluntary movement of persons between territories, higher education, traffic On federal trunk roads, prisons and other institutions for the treatment of offenders and a Blanket provision for industrial development.

With these items on the Concurrent Legislative List of the 1960 Constitution, it is trite that a Region indirectly was granted the status of a Republican Government, albeit the fact that it was not expressly stated in the Constitution like that of the United States of America. A Region which is empowered to legislate on arms and ammunition, census, movement of persons between territories, registration of business names, scientific and industrial research and industrial development (to mention but a few), is afortiori a small Republic itself having the powers to set up and maintain a State in international law, though without an internationally recognized Police Force, Army and other organs of the armed forces. But the power to legislate on arms and ammunitions can be argued to be incidental, or inclusive of the power to establish a Regional body for the manufacture and operation of same. This view is supported by item 28 in the Concurrent Legislative List, which gives the Region a carte blanche power in respect of: “Any matter that is incidental or supplementary to any matter referred to in this List.”
The 1960 Constitution provides thus:

i. There shall be paid by the Federation to each Region a sum equal to fifty per cent of:
   (a) the proceeds of any royalty received by the Federation in respect of any minerals extracted in that Region; and
   (b) any mining rents derived by the Federation during that year from within that Region.

ii. The Federation shall credit to the Distributable Pool Account a sum equal to thirty per cent of -
   (a) the proceeds of any royalty received by the Federation in respect of minerals extracted in any Region; and
   (b) any mining rents derived by the Federation from within any Region.

iii. For the purposes of this section the proceeds of a royalty shall be the amount remaining from the receipts of that royalty after any refunds or other repayments relating to those receipts have been deducted there from or allowed for.

iv. Parliament may prescribe the periods in relation to which the proceeds of any royalty or mining rents shall be calculated for the purposes of this section.

v. In this section "minerals" includes mineral oil.

vi. For the purposes of this section the continental shelf of a Region shall be deemed to be part of that Region.

135 - There shall be paid by the Federation to the Regions at the end of each quarter sums equal to the following fractions of the amount standing to the credit of the Distributable Pool Account at that date, that is to say -

(a) to Northern Nigeria, forty ninety-fifths;

(b) to Western Nigeria, twenty-four ninety-fifths;

(c) to Eastern Nigeria, thirty-one ninety-fifths.

136 - Each Region shall in respect of each financial year pay to the Federation an amount equal to such part of the expenditure incurred by the Federation during that financial year in respect of the department of customs and excise of the Government of the Federation for the purpose of collecting the duties referred to in sections 130, 131, 132 and 133 of this Constitution as is proportionate to the share of the proceeds of those duties received by that Region under those sections in respect of that financial year."

The germane portion of these sections is section 134(6) thereof which provides that: "For the purposes of this section, the continental shelf of a Region shall be deemed to be part of that Region."

This is loosely speaking what is called resource control. The Region or State wherein the continental shelf is located should be empowered by legislation (as above) to benefit from the natural resources located therein. Consequently, the present call for resource control is not new. In point of fact, it was the plank upon which Nigerian sovereignty rested on October 1, 1960 by virtue of the Nigeria (Constitution) Order in Council, 1960.

The 1963 Republican Constitution and Federalism

As has been hitherto observed, there are really no significant changes in the 1963 Constitution, save for the nomenclature of the Queen and the finality of the decisions of the Supreme Court of Nigeria. Accordingly, Nigeria became a legal sovereign and its appeals no longer lay from the Supreme Court of Nigeria to the Privy Council of the House of Lords in the United Kingdom.

As regards the items listed in the respective Legislative Lists, it appears that they are (Ipsisima verba) with those contained in the 1960 Constitution. The items under the Exclusive Legislative List remained 44; whilst those in the Concurrent Legislative List remained 29. Having enacted the Niger-Delta Development Board Act of 1961, section 14 of the 1960 Constitution was naturally expunged from the 1963 Republican Convention, although similar provisions were re-enacted in section 159 thereof as regards the composition and structure of the Niger-Delta Development Board. The principles of high derivation and loose resource control under sections 134 and 134(6) of the 1960 Constitution were retained under sections 140 and 140(6) of the 1963 Constitution respectively.

Although the 1960 Constitution provided for fiscal autonomy of some sort, the Republican Constitution lucidly spelt out certain powers, which will be exercisable by the Government at the centre and the Regions themselves.

True federalism implies mutual respect for the federating units and not one of perpetual dominance by the Government of the centre or any of the States in

the union. As matter of fact, the States are major players in the political, social and economic scheme of events.

The 1963 Constitution empowers a Region to legislate for the President or the Federation indirectly. That section provides thus:

> A law enacted by the legislature of a Region may include provision conferring powers or imposing duties, or authorizing the conferring of powers or the imposition of duties, upon the President or any officer or authority of the Federation: Provided that no provision made in pursuance of this subsection, shall have effect unless the President has consented to its having effect.

The wordings of section 100(2) of the 1963 Republican Constitution and that of Amendment X of the 1791 in the Constitution of the United States of America are different, they are nevertheless unified by the same philosophy of State or Regional autonomy as exemplified in a true federalism. The 1960 Independence Constitution as well as its 1963 Republican counterpart remain the foremost and only Constitutions in Nigerian history which have enshrined the principles of true federalism, resource control and fiscal autonomy to the Regions and/or States.

The 1999 Constitution and federalism

The 1999 Constitution of the Federal Republic of Nigeria, do not provide the needed ingredient for true federalism in Nigeria. Like its disguised constitutional counterparts in 1979 and 1989, it is a civilian version of Decree 34 of 1966. The unitary features of the 1999 Constitution are hereby reproduced hereunder, thus:

(i) Section 213, creates a centralized body for census i.e. National Population Census Commission. Under a federal structure as practiced in the 1960 Independence and 1963 Republican Constitutions, census was placed on the Concurrent Legislative List, thus empowering the Regions to legislate on same.

(ii) Section 214, also creates and retains the centralized police force.

(iii) Section 237, still empowers only the Federal Government to set up a Court of Appeal. The States ought to be empowered to set up their own appellate Courts, which will only be subordinate to the Federal Supreme Court. Suffice it to say that in furtherance of the principle of true federalism, States are empowered to establish their own Sharia Court of Appeal under section 275 thereof.

(iv) Section 271, still provides for the appointment of Judges to State High Courts subject to recommendation by the National Judicial Council.

The 1999 Constitution further empower National Judicial Council to:

(v) recommend to the Governors from among the list of persons submitted to it by the State Judicial Service Commissions person for appointments to the offices of the Chief Judges of the States and Judges of the High Courts of the States, the Grand Kadis and Kadis of the Sharia Courts of Appeal of the States and the Presidents and Judges of the Customary Courts of Appeal of the States;

(vi) recommend to the Governors the removal from office of the judicial officers.

(vii) empowers the council to collect, control and disburse all moneys, capital and recurrent, for the judiciary.

However, the Secretary of the Council is to be appointed without any input from the States. This directive is contained in section 22 thereof which provides that: 'The Secretary of the Council shall be appointed by the National Judicial Council on the recommendation of the Federal Judicial Service Commission and shall be a legal practitioner'.

The provisions identified are anti-federalism, and they remain the vexed issues of the Nigeria federal structure.

Public revenue under section 162(1)-(9)

Federalism is defined empirically at the fiscal realm of governance. The extent of fiscal autonomy under the regulatory laws, determines the level of federalism in a particular Union. The 1999 Nigerian Constitution prescribes a quasi-federal political structure, where the national assembly and the federal

executive council are most powerful and dictate the economic development of component units of the State.

The National Assembly to large extent deliberate and protect all the stakeholders in the Federation ranging from the Federal Government itself to the States and Local Government Councils. What is paid to resource producing states are mere compensation. By S. 44(3), states cannot control their resources:

> 44.-(3) Notwithstanding the foregoing provisions of this section, the entire property in and control of all minerals, mineral oils and natural gas in, under or upon any land in Nigeria or in, under or upon the territorial waters and the Exclusive Economic Zone of Nigeria shall vest in the Government of the Federation and shall be managed in such manner as may be prescribed by the National Assembly.

This section centralizes and arrogates the entire property in and control of all minerals in the Government of the Federation to be managed as directed by the National Assembly. The State Houses of Assembly are expressly barred from making any legal input on how to control and regulate their resources.

S. 163 also provides that tax or duty imposed in respect of any of the matters specified in item D of Part H of the Second Schedule to this Constitution, the net proceeds of such tax or duty shall be distributed among the States on the basis of derivation and accordingly — (a) where such tax or duty is collected by the Government of a State or other authority of the State, the net proceeds shall be treated as part of the Consolidated Revenue Fund of that State; (b)where such tax or duty is collected by the Government of the Federation or other authority of the Federation, there shall be paid to each State as such times as the National Assembly may prescribe a sum equal to the proportion of the net proceeds of such tax or duty that are derived from that State (CFRN).

The questions that arose are? Why is it the National Assembly that will determine the amount of tax collected on behalf of a State, to be paid to the State? Why can't the Government of the Federation and the respective States enter into a memorandum of understanding on how to deal with such taxes collected?

S. 2(2) of the 1999 Constitution

These Sections provides thus:

> 2. (1) Nigeria is one indivisible and indissoluble sovereign State to be known by the name of the Federal Republic of Nigeria.
>
> (2) Nigeria shall be a Federation consisting of States and a Federal Capital Territory.

Akpo, quoting Williams noted that:

> For what is worth, my personal opinion is that the 1999 Constitution is not properly structured in terms of the federal unit. Another important aspect of our past constitutions is that far too much powers are vested in the Federal Government. Also, the formula for revenue allocation requires re-examination in the light of a federal government with reduced powers in comparison with federal units with increased powers and responsibilities.

No doubt, the 1999 Constitution is encumbered all through by anti-federal provisions, and centralization of state assignments.

Other Practices of Government that Inhibit Federalism since 1999

The Universal Basic Education (UBE) - This is a programme, which the President Olusegun Obasanjo resuscitated as practiced under his military regime. Section 30 of the Concurrent Legislative List in Part II of the Second Schedule provides:

> Nothing in the foregoing paragraphs of this item shall be construed so as to limit the powers of a House of Assembly to make laws for the State with respect to technical, vocational, post- primary, primary or other forms of education, including the establishment of institutions for the pursuit of such education.

The State is empowered to legislate and regulate the establishment and activities of primary schools within their domain. The Federal Government has no constitutional authority whatsoever to hijack and centralize any power to regulate primary schools activities in Nigeria, nor power to withhold the salaries of the teachers of primary schools in Nigeria. Yet, Federal government is still managing the Universal Basic Education (UBE), spending monies and directing activities in the sector.

Deductions from Source: It is a process whereby the Federal Government deducts from source, alleged financial liabilities from the revenue allocated to a Local Government Council. The Federal Government do not have any constitutional power to tamper with and/or deduct from any revenue allocated to the Local Government Councils by the National Assembly. S. 162(6) enjoins the States to: 'maintain a special account to be called "State Joint Local Government Account" into which shall be paid all allocations to the Local Government Councils of the State from the Federation Account and from the Government of the State.

By this provision, the federal government is obliged to pay the revenues accruing to the Local Government Councils as approved by the existing law under sections 313 and 315 of the Constitution (or a revenue formula act passed by the National Assembly) into a State Joint Local Government Account without any deductions whatsoever. The practice of deduction from source of monies owed by the federating units by the federal government runs against the spirit of federalism.

The Federal Government has persistently and systematically continued to encroach on the powers, resources, functions and responsibilities of the States and Local Government Councils in Nigeria.

Research Methodology

This paper adopts the descriptive survey design to determine whether restructuring efforts in the past provided answer to the agitation of fiscal federalism and devolution of powers in Nigeria. This design is adopted to precisely and extensively describe the outcome based on sample data. Using the purposive sampling, the researcher identified two groups that have been active in the debate on restructuring. They are the academia, and the ethnic groups. To give a national outlook, the University of Ibadan, Jos and Rivers State University are selected respectively from the West, North and Eastern Nigeria. While the Afenifere Socio-cultural group, the Ohaneze Idigbo and the Ijaw national congress were also selected for investigation.

50 questionnaires were administered to each region mentioned above, making a total of 150 questionnaires nationwide. 20 of the questionnaires were administered to the ethnic group members, while 30 were administered to each university to elicit the views of both the ethnic group and the members of the academia on the critical issue of restructuring, the aim is to ascertain whether restructuring efforts in the past provided answer to the agitation of fiscal federalism and devolution of powers.

The instrument contains 4 items which are used to elicit information from the respondents. The instrument was divided into sections A and B. Section A sort demographic data of the respondents, B, contain items critical to the question of past efforts at restructuring Nigeria. Items in B are arranged for responses in a 4-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). They are presented in 4, 3, 2 and 1 point respectively.

The researcher personally administered the questionnaire on Arewa Consultative Forum, the Afenifere and the Ohaneze Ndigbo Socio-Cultural Organization executive councils Rivers State branch. While colleagues and research assistants administered questionnaire in the University outside Port Harcourt. The mean, standard deviation (SD) are used in all analysis.

Data Presentation

Research Question: Have restructuring efforts in the past swayed the agitation for fiscal federalism and devolution of powers in Nigeria?

Table 1: Combine responses of members of the academia and ethnic groups

S/N		SA	A	D	SD	$\overline{X}$	SD	Dec.
8.	Restructuring efforts in the past have reduced agitation for fiscal federalism	80	20	50	400	1.6	1.08	Disagree
9.	The political restructuring by the military have contributed to the constitutional stalemate in Nigeria	430	70	20	30	3.6	0.67	Agree
10.	Ethnic loyalty has contributed to failure of constitutional conferences in the past	400	50	50	50	3.45	0.98	Agree
11.	Fiscal federalism will marginalize some parts of Nigeria	200	50	50	250	1.6	1.56	Disagree

Source: Author's Computation

Table 1 show whether efforts to restructure the Nigerian polity in the past have reduced agitation for restructuring. Item 8 displayed a mean of 1.6, which is less than 2.5. Here, the respondents are of the view that restructuring efforts in the past have not reduced the agitation for fiscal federalism and resource control. Item 9 had mean of 3.6, meaning that the military kind of restructuring in the past have aggravated the current debate for restructuring. In item 10, the mean value is 3.45, higher than 2.5. Respondents agree that ethnic loyalty has contributed to the failure of constitutional conferences in the

past. Item 11 had a mean value of 1.6 less than 2.5. The implication is that fiscal federalism will not marginalize any part of Nigeria.

Discussion of Findings

Items 8-11 in the questionnaire investigates whether restructuring efforts in the past have reduced the agitation and call for fiscal federalism and devolution of powers. Item 8 with a mean value of 1.6, less than 2.5 indicates that past restructuring exercises, such as the past restructuring exercises, such as the state and local government creation, formation of development commissions like the OMPADEC, NDDC, RBDA, have not reduced the clamour of restructuring of the Nigeria polity. In 2005, the Obasanjo Constitutional reform was aborted at the national assembly, while the 2014 Constitutional Conference of Goodluck Ebele Jonathan administration lived to the extent of the end of the conference.

Respondents in item 9 agreed that the military incursion into Nigeria political space have contributed to the present constitutional stalemate in Nigeria. In order words, all the political reforms of the military only added to the clamour for the further restructuring of the Nigeria polity. At mean value of 3.6, respondents are of the opinion that the series of state and local government creation by the military and all the revenue allocation decrees, such as the Decree 9 of 1971, Decree 10 of 1991 and the establishment of the National Revenue Mobilization, Allocation and Fiscal Commission in S. 140 of the 1979 Constitution and S. 153(1) of the 1999 Constitution have not stopped the clamour for further restructuring the Nigerian polity.

Military in Nigeria, particularly that majority of them are from a particular region in the country, somersaulted the 1963 constitution. Nigerian constitution is virtually a unitary product which its authors from the military have crafted to make things difficult for the smaller ethnic regions.

Item 10 had mean value of 3.45, indicating that respondents agreed that ethnic loyalty has been a major challenge in the past restructuring attempts in Nigeria. The North had always believed that attempts at restructuring will place them at economic disadvantage.

Meanwhile in item 11, respondents believe restructuring the Nigeria polity will not put any section in economic disadvantage. With a mean value of 1.6, respondents debunk the opinion held in the past that restructuring will place certain parts of the country at disadvantage. Almost all parts of Nigeria have arable land for agriculture, solid minerals located in virtually all parts of the country. Restructuring will enhance full exploitation of the nation's natural resources for the good of the people.

On the other hand, Nigeria will optimize the exploration of natural resources. States will be forced to work/or explore natural resources to fund its developmental projects. Every state in Nigeria have the resources to sustain its economy if given the opportunity, through constitutional reforms. In standard federal states, such as the United States, some state specialize in agriculture, while others specialize in entertainment, technology, etc. This is what makes the American economy retain its number one rating in the world economies.

Conclusion

In the restructuring debate, Nigerians have raised critical issues of national concern, if considered and implemented will put Nigeria on the part of economic, social and political growth. Nigerians agreed that fiscal federalism and devolution of powers are critical issues that require attention in the restructuring exercise. It was also agreed that the inability of successive restructuring efforts to address the issues have kept the campaign of restructuring alive and unabated. The abandonment of the 1963 Constitutional provisions on revenue allocation, and S. 140 (6) of 1963 Constitution will continue to leave the country worse for it.

The exclusive to federal government, issues of electricity, labour, mines, minerals and oil fields, natural gas, have all added to the deprivation of states of their resources. The concept of fiscal federalism and devolution of powers are key to achieving a sustainable Nigeria. Other issues for national consideration are; allocation formula, centralization of security at the centre, resource control, the land use decree, the derivation principle, citizenship, electricity, among others.

Recommendations

It is clear that a sustainable restructuring debate in Nigeria must exhaustively involve the practical implementation of fiscal federalism/resource control and devolution of powers to the federating units. Items in the exclusive list and the concurrent list must be altered in favour of the states. The federal government should handle responsibilities related to defense, foreign affairs, currency, telecommunication, immigration, custom duties and excise, citizenship and nationalization, etc; while the states should handle agriculture, education, health and, labour. The states to carry out its responsibilities should manage mineral resources and other natural resources and pay 50% to the federal government.

1. Power should be devolved to the state. The states should be able to take care of is civil police, prisons, and extend its judiciary to Court of Appeal.
2. States should be allowed to establish external relationship with other countries, as well as borrow money to further its development.
3. While majority of Nigerians agree that there is need to restructure the polity, a lot of people do not understand the areas of emphasis. It is therefore important that further sensitization is carried, especially in the Northern part of Nigeria. Restructuring is not synonymous to balkanization of the country. It is also important to allied the fears of elite class and politicians. These groups preferred the status-quo because they are afraid of the unknown.
4. It is important that leaders in Nigeria should have the political will to restructure the polity. The leaders in the past that created these structures cannot be the same to restructure. The country needs a new set of leadership to restore the polity to the structure before the civil war.
5. A lot debates, seminars and conferences have been held in the last nineteen years. What is needed not is to put all the papers and discussions together to restructure the country. Political will is key at this point of the national constitution logjam.

References

Adebayo, S.B. (2017) 'Restructuring Nigeria: A Critical Analysis' *ThisDay Newspaper Lagos.* <https://www.thisdaylive.com/index.php/2017/66/11/restructuring-nigeria-a-critical-analysis> accessed 16-1-2019.

Agiobenebo, T.J. (1999). Assignment, Criteria and the Fiscal Institution: An Excursion into a Theory of Rational Fiscal Federalism; Fiscal Federation and Nigeria Economic Development. *Nigeria Economic Society*, Ibadan.

Akpo, M.O. (2002). *The Challenge of True Federalism and Resource Control in Nigeria*. Abuja: Quadro Impression Ltd.

Anyanwu, C.J. (1999). *Fiscal Relations Among the Various Tiers of Government in Nigeria*. Paper presented at the NES Conference; Fiscal federalism and Nigeria economic development, Ibadan.

Anyanwu, N.D. (1999). *The Makers*: Federal Republic of Nigeria.

Augustine E. and Mordi, R. (2018). Buhari Osinbajo lash out at Restructuring Advocates. *The Nation,* November 13th <thenationonlineenginet/Buhari-Osinbajo-las-out-at-restructuring-advocates> accessed 16th January.

Bryan, A. Garner. The Law Dictionary featuring Black's Law Dictionary free online legal Dictionary <https://thelawdictionary.org/restructuring> accessed 17-1-2019.

Constitution of the Federal Republic of Nigeria, 1999 as amended.

Dare, L.O. (1979): Perspective on Federalism in Akinyemi A.B. and others (eds). *Reading on Federalism*. NIIA, Lagos.

Domo-Spiff, E. (2010). An Examination of the Legal Regimes of Fiscal Federalism in Nigeria. LLM Dissertation, Rivers State University.

Ekpebu Lawrence (2008). A keynote speech delivered at the opening session of the International Conference on the Nigerian State, Oil Industry and the Niger Delta, Niger Delta University, Amasoma.

Godini, G.D. (2017). *Democracy and development in Nigeria: The case of Rivers State*. Lecture delivered on the occasion of Rivers State Golden Jubilee Celebration, Port Harcourt.

Hornby, A.S. Oxford Advanced Learners Dictionary of Current English, 9th edition. London: Oxford University Press.

Ikeme, O. (1999). Constitutional Development in Nigeria (1861-1980) (Ed). A ground work of history.

Kingsley, Moghalu (2018). How toRrestructure Nigeria: Why, what, how and when. The Cable, October 29, <https://www.thecable.ng/how-to-restructure-nigeria-why-what-how-and-when> accessed 17th January 2019.

Mills, J.S. (1901). *Representative Government* (Oxford University Press, London).

Moghalu, K. (2018). 'How to Restructure Nigeria: Why, what, how and when' *The Cable* October 29. <https://www.thecable.ng/how-to-restructure-Nigeria-why-what-how-and-when> accessed 17th January, 2019.

Musgrave, R.A. and P.B. Musgrave (1989). Public Finance in Theory and Practice, International edition. Singapore, McGraw-Hill.

Obaze, H.O. (2018). *Policy Interrogation, Discourse and Debate on restructuring Nigeria: Not when, but how*. <https://www.gamji.com/obaze/obaze15.html> accessed 20th January 2018.

Ogih, M. (2107). Restructuring Nigeria: Meaning, Reasons, Problems and Prospects. *Info Guide Nigeria* October 10.

<https://infoguidenigeria.com/restructuring-Nigeria> Accessed 17th January, 2019.

Olasup, A. & Erhun, M.O. (2008). *Fiscal Federalism in Nigeria Constitutional or Political Solution*. International Conference Proceedings: The Nigerian State, Oil Industry and the Niger Delta. Port Harcourt: Harey Publication.

Olufemi, Mimiko (2018). Fiscal Federalism and Restructuring in Nigeria: Lessons from elsewhere. Nigerian Tribune, September 25th 2018, <https://www.tribuneonlineng.com/165907> accessed 17th January.

Steven, Adebayo (2017). Restructuring Nigeria: A critical analysis. This Day Newspaper Lagos. <https://www.thisdaylive.com/index.php/2017/66/11/Restructuring-nigeria-a-critical-analysis> accessed 16th January.

The Littleton Constitution of 1954.

Wheare, K.C. (1971). Federalism in Government. London: Oxford University Press.

Yilmaz, I. (2012). The Impact of Fiscal Decentralization on Macroeconomic Performance. *Annual Conference on Taxation*, Atlanta, GA.