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Impact of HIV Aids on Economic Growth of Nigeria: 1990-2016

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Abstract

This study analyzes the impact of HIV/AIDS on the Economic growth of Nigeria over the period of 1990 – 2016. The variables tested are Human Development Index, GDP per Capita, HIV/AIDS and Employment rate, all of which were stationary at first difference except HIV which was stationary at level. Since the Variables were not all stationary at level the ARDL co-integration test was used to determine the long-run relationship between the variables. The variables were found to be co-integrated at1% level of significance. The Regression result found out that there is a negative and significant relationship between HIV/AIDS and Human Development Index. Secondly, HIV/AIDS has a negative and significant impact on the Gross Domestic Product per capita. Finally, HIV/AIDS has a negative and significant impact on the employment level in Nigeria. Based on the empirical analysis, the recommendations of the study include: Government at all levels should intensify effort to reduce the number of new infected persons. This should include increased education and information campaign especially in the ill-informed rural areas to end the silence, stigma and indifference to HIV/AIDS. To achieve this, religious leaders, village heads, transport union etc. should as well be fully involved in the campaign owning to their influence on the people in the communities.

Keywords: Epidemic**,** HIV/AIDS, Economic Growth, *ARDL* Co-integration Test
JEL Codes: H51

1. Introduction

Nigeria recorded her first case of AIDS in 1986. Since then, the epidemic has increased from 1.8 percent (1,800,000 estimated infected persons) in 1991, to 5.8% (3,200,000 estimated infected persons) in 2001 and 5 percent (3,500,000 estimated infected persons) in 2003 (FMH, 2003). The young people, especially women below the age of 24 years are among the most vulnerable groups with a HIV (Human Immune Virus) prevalence rate of 6 percent. Despite the wide range of prevention programmes targeted at increasing awareness and knowledge, it has not translated into the desired behaviour change. Consequently, the rate of abstinence and safe sex practices is still widely low amongst the general population. Also, widespread stigmatization and discrimination especially amongst health workers has continued to fuel the epidemic (Barnett and Whiteside, 2012).

The government is compelled, therefore, to transfer funds which otherwise could be used in development projects into healthcare in order to curtail the epidemic. For instance, in 1989 alone, government spent 2.7 percent of the country's GDP on healthcare and the figure keeps rising each year. Indeed, the socio - economic and political importance of human capital to any human society cannot be over - emphasized. A country can only afford its neglect at its own peril, because the level of a country's accumulation of human capital determines the quality and output of its workforce and development in all facets of human endeavors (Balogun, 2011).

Since the discovery of HIV, the causative agent of the AIDS (Acquired Immune Deficiency Syndrome) pandemic in 1984, the disease has continued to wipe out the best brains particularly in developing countries that are desperately needed to propel their

countries to greatness (Awolowo, 1981). The statistics of HIV/AIDS infection are alarming and present a disastrous human catastrophe ever recorded in human history. Over 40 million people worldwide are today living with HIV/AIDS. Out of this figure, about 30 million are Africans 18 million had died worldwide, 13 million of whom were Africans from the Sub-Saharan Africa (Bloom and Mahal, 2011).

Additionally, the disease in African had so far affected 12 million children while 8,000 Africans die daily from HIV/AIDS and an estimated three million Africans got infected newly in 2001 alone. No doubt, the most vulnerable targets are the youths or the working age population aged 14 – 49 who have critical social and economic roles to play are disproportionately being ruined by the HIV/AIDS disaster (Hacker, 2012). Real economic growth only comes from increasing quality and quantity of the factors of production, which consist of four broad types: land, labour (human capital), capital and entrepreneurship. Hence, effective and efficient utilization of land labour and capital requires optimal combination of these factors by the human capital (Aluko and Adeniji, 2015).

According to Hacker (2012) in the 1990's, the Nigerian economy collapsed while government support for infrastructure and basic services declined considerably during the period of military dictatorship which ended in 1999. During this period, the government seemed not prepared to face the growing HIV/AIDS crisis. Only courageous Nigerians, such as the Kuti family were raising the alarm. When democracy returned in 1999, the new government not only had to build more efficient, transparent and accountable governance systems but also had to deal with other challenges such as economic depression, a neglected health and education sector and dilapidated infrastructure.

This study covers the period 1990 – 2016. The basis for covering this period of time is to show whether there has been any impact of HIV/AIDS on the Economic Performance in Nigeria. This period is chosen to adequately examine the impact of HIV/AIDS on economic performance of Nigeria.

2. Empirical Review and Theoretical Framework

Poor health conditions in developing countries often harm the productivity of labour. Studies show that healthier people earn higher wages. For example, daily wage rates in Cote d'Ivoire have been estimated to be about 19 percent lower among men whose health status makes them likely to lose a day of work per month because of illness than daily wage rates of healthier men (Jimaza, 2006). Careful statistical methods have shown that a large part of the effect of health on increasing earnings is due to productivity differences; it is not just the reverse causality that higher wages are used in part to purchase better health. A study in Bangladesh found that, the higher the productivity of healthier workers allows them to get better paying jobs, yet another study shows that, the elimination of deformity from leprosy was estimated to more than triple earnings of workers in India (Oxfam International and Save the Children, 2002).

However, due to the fact that there is a lack of reliable time series data on economic development and AIDS, also disentangling the effects of AIDS from other influences is particularly problematic in Africa, hence, drawing conclusions about macro level impacts will be difficult. Macro evidence from the early phases of the epidemic generally failed to support the hypothesis that AIDS would have a detrimental effect on growth rates of per capita income.

Macro simulation models customized in various ways to account for key aspects of the AIDS epidemic did suggest some impacts. An estimate based on a computable general equilibrium model suggested that HIV/AIDS would have resulted in 2 percent decline in the rate of real GDP growth in Cameroon between 1987- 1990 (Barnett, 2012).

Another set of simulation analysis conducted by John Cuddington and co-authors in a neo-classical growth model suggested that the AIDS epidemic would depress the annual rates of growth of real GDP per capita in Malawi and Tanzania by an average of 0.25 percent over the period 1991-2000. In contrast to the results of these simulation studies, the findings from the only empirical study conducted over a comparable period, from 1980-1992, concluded that AIDS has no statistically

significant impact on per capita income growth (Balogun, 2011)

However, HIV/AIDS epidemic has since grown rapidly and has a significant effect on life expectancy and other human development indicators. Recently Arndt and Lewis (2000) used a Computable General Equilibrium model more comprehensive than others to conclude that over the period 2000-2010, the annual rate of growth of real GDP in South Africa under this projected AIDS scenario would be substantially lower in comparison to a no AIDS scenario, with the difference ranging from 1 percent to 2.6 percent depending on the year. They found out that per capita real GDP would suffer on account of HIV/AIDS although not as much as real GDP (Abumere, 2009)

The econometric specifications that are used for estimating the impact of HIV/AIDS on the rate of growth of real income per capita are essentially empirical counterparts of the well-known Solow model. Two such specifications are used: a modified version of the empirical specification used in Bloom (2011), with new data, for the period 1980 to 1998 for 69 countries; and a modified version of the equation used by Bloom and Williamson (1998). Estimation of the two specifications allows for the possibility of reverse causation running from growth in income per capita to HIV prevalence as well. Under the BM specification, the annual rate of growth of real GDP per capita during 1980-1998 was negatively related to the AIDS variable but statistically significant at the 10 percent level. The finding of statistical significance continues to hold if we undertake the estimation exercise for the two sub- periods, 1980-1990 and 1990-1998, separately(Strauss and Thomas, 2008). These results are consistent with the original Bloom (2011) findings that relied on data from a set of 51 countries for the period 1980 to 1992, that HIV/AIDS did not have a statistically significant influence on the real income per capita during the first decade of the AIDS epidemic. Indeed, the magnitude of the coefficients of the AIDS variables for the BM specification is remarkably similar to those reported by Bloom (2011). Under the BW specification too, the direct impact of HIV/AIDS on economic growth is statistically insignificant for the period 1980 to 1998 (Tansel and Schultz, 2007).

However, as the years progressed, it is realize that the potential adverse effects of the HIV/AIDS epidemic on per capita income may be mitigated by decline in population; the fall in a country's overall output (GDP) and its covariates may have significant long-term impacts. A similar workforce – one likely outcome of a large number of deaths due to AIDS - reduces the opportunities for division of labour and specialization, with consequences for productivity. Moreover, both employees and employers will perceive fewer incentives to invest in long term training, so productivity at the level of the firm may be affected negatively. Even if per capita income do not decline in the short term, the shrinking of a country's workforce that results from HIV/AIDS may pose threats to production and ultimately, to individual workers.

The thrust of this study primarily is to analyse the impact of HIV/AIDS on economic development in Nigeria. Furthermore, the work seeks to identify specific sectors in which the menace of HIV/AIDS affects the economy. It also seek to identify the areas which can be harnessed for sustained production and employment level despite the prevalence of HIV/AIDS

Theoretical Framework

The theoretical framework for this study is the Endogenous Growth Theory or New Growth Theory which was developed by Lucas as a reaction to the flaws of the Neoclassical (Exogenous) growth theory. Romar Endogenous growth theory was first presented in 1986 in which he takes knowledge as an input in the production function. The theory aimed at explaining the long run growth by endogenizing productivity growth or technical progress.

The major assumptions of the theory are:

1. Increasing returns to scale because of positive externalities.
2. Human capital (knowledge, skills and training of individuals) and the production of new technologies are essential for long run growth.
3. Private investment in Research and Development is the most important source of technological progress.

4. Knowledge or technical advances are non-rival good.

In the New growth theory, the savings rate affects the long run economic growth because in this framework, a higher level of savings and capital formation allows for greater investment in human capital and research and development. The model predicts that the economy can grow forever as long as it does not run out of new ideas or technological advancement. Just like the exogenous growth theory, the endogenous growth theory professes convergence of nations by diffusion of technology. That is, a situation where poor countries manage to catch up with the richer countries by gradual imitation of technology by poorer countries.

Romar states that production function of a firm in the following form:

$$Y = A(R)\ F\ (Ri, Ki, Li) \quad 2.1$$

Where:
A - Public stock of knowledge from research and development(R),
Ri - Stock of results from the stock of expenditure on research and development.
Ki - Capital stock of firm i
Li - Labour stock of firm i

The Ri actually represents the technology prevalent at the time in firm i. Any new research technology spill over quickly across the entire nation. Technological progress (advancement) implies the development of new ideas which resemble public goods because they are non-rival.

When the new ideas are added as factors of production the returns to scale tend to be increasing. In this model new technology is the ultimate determinant for long run growth and in itself determined by investment in research technology. Therefore, Romar takes investment in research technology as endogenous factor in terms of the acquisition of new knowledge by rational profit maximization firms.

The endogenous model included human capital represented by Government spending on Health and education and the model is stated as;

$$Y = AK^{\beta 1} L^{\beta 2} H^{\beta 3} e^{\mu} \quad 2.5$$

Where β_1, β_2, β_3 are partial elasticity of capital, labour and human capital $\beta_1 + \beta_2 + \beta_3 = 1$ indicating constant return to scale. μ is the error term.

3. Methodology

Research Design

In carrying out this work, certain methods were used. This section eexplains in depth, the procedures followed in arriving at the inference of this research work. The Least Square Regression Technique is the tool for analyses. The study covers the period of 1990 to 2016.

Model Specification

To carry out the investigation, the model of Bloom (2011) is adapted which examined the impact of HIV/AIDS on Per capital Income found that there exist a causal relationship between HIV/AIDS and Income. The model is given as follows;

$$GDPP = f\ (HA, LAB) \quad 3.1$$

Where;

GDPP is GDP per capita
HA is annual total death as a result of HIV and AIDS
LAB is Labour Force measured as total employment

The model is extended to incorporate Human Development Index and Employment as other dependent variables;

$$GDPP = a_0 + a_1 hiv + ei \quad 3.2$$

$$hdi = b_0 + b_1 hiv + b_1 gdpp + b_1 emp + b_1 gr + ei \quad 3.3$$

$$emp = b_0 + b_1 hiv + ei \quad 3.4$$

Where:
GPPP = Gross Domestic Product per capita
hdi = Human Development Index
hiv = Total number of people infected with HIV/AIDS per annum in Nigeria.
gdpp = Gross Domestic Product per capita
emp = Total number of Employment Generated

4. Data Analysis and Interpretation of Results

The results presented in this section are based on tests ealier stated. All results to be analyzed in this section are computed using Microfit 5.0 and Eviews 9.0 statistical software packages.

Summary Statistics

Table 4.1 shows the summary statistics for the variables under study. It was observed that all the variables were normally distributed based on the Jarque-Bera Normality test.

Table 4.1 Summary Statistics

	EMP	HIV	GDPP	HDI	GR
Mean	46162725	93384.99	73224.72	13.93011	5.932211
Median	48875000	94500.00	52219.45	10.69250	3.694310
Maximum	63150000	135090.0	231800.0	28.82300	14.83210
Minimum	28900000	36560.00	658.1000	7.631000	-8.321530
Std. Dev.	10377213	31322.87	77298.33	6.874464	2.873424
Skewness	-0.347121	-0.231078	0.861815	0.826430	0.454430
Kurtosis	2.082698	1.587855	2.443416	2.438111	2.854131
Jarque-Bera	1.433699	2.391719	3.554074	3.301640	3.854140
Probability	0.488288	0.302444	0.169139	0.191892	0.294392
Sum	1.20E+09	2428010.	1903843.	362.1829	121.12439
Sum Sq. Dev.	2.69E+15	2.45E+10	1.49E+11	1181.456	1141.4126
Observations	26	26	26	26	26

Source: Author's Computation E-views 9.0 (2018)

The probability value of the variables were 0.488288, 0.302444, 0.169139, 0.191892 and 0.294392 which are all greater than 0.05 (5 % level of significance) as such the variables were all normally distributed.

Stationarity Result

The five variables (Per Capita Gross Domestic Product, Total AIDS death, Human Development Index, Employment and Growth rate) underwent unit root test using the Augmented Dickey-Fuller (ADF) test.

Table 4.2: Unit Root Stationarity Result

	ADF Statistics	Critical Value	Stationary Status
GDPP	-7.460302	-4.26274(1%) -3.55297(5%) -3.20964(10%)	I(1)
EMP	-8.382534	-4.26274(1%) -3.55297 (5%) -3.20964(10%)	I(1)
HDI	-6.009893	-4.26274(1%) -3.55297 (5%) -3.20964(10%)	I(1)
HIV	-4.611492	-3.9932 (1%) -3.29382 (5%) -3.09232 (10%)	I(0)
GR	-4.939843	-4.26274(1%) -3.55297 (5%) -3.20964(10%)	I(1)

The critical values for rejection of hypothesis of unit root were from MacKinnon (1991) as reported in e-views 9.0.
Source: Author's Computation E-views 9.0 (2018)

As is the case most times, all three variables were found to be non-stationary at levels except HIV which was stationary at levels. The remaining three variables (GDPP, EMP, GR and HDI) were found to be stationary at first difference.

Johansen Co-integration Test

From table 4.3, the probability values are all less than 0.05 (5% level of significance) indicating that the variables are cointegrated. It shows the long run relationship existing among the variables of study. The table shows the variables converge in the long run thereby depicting the existence of long run relationship among them. The long run relationship exists at 5% level of significance according to the Trace test statistics and the Eigenvalue. This implies there exists four co-integrating relationship among the variables. Therefore there is long run relationship among the variables.

Table 4.3: Johansen Co-integration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.963619	305.0857	159.5297	0.0000
At most 1 *	0.938099	212.3017	125.6154	0.0000
At most 2 *	0.789378	134.3995	95.75366	0.0000
At most 3 *	0.667567	90.78417	69.81889	0.0005
At most 4 *	0.582308	59.94733	47.85613	0.0025

*Trace test indicates 4 cointegrating equations(s) at the 0.05 level; * denotes rejection of the hypothesis at the 0.05 level; **MacKinnon-Haug-Michelis (1999) p-values*
Source: Author's Computation Eview 9.0 (2018)

Regression Results

D(GDPP) = -2.1018508 – 3.116384HIV
T Stat (-2.8320) (-6.6114)

From the result a unit increase in Total number of AIDS death will lead to 3.116 decrease in per capita GDP. This shows that HIV has a negative impact on GDP per capita.

D(HDI) = -4.446973 – 0.320858HIV + 0.224107GDPP + 0.4735EMP + 0.00346GR
T Stat (-0.5664) (-3.1661) (2.0886) (2.1713) (0.2015)

From the result a unit increase in Total number of AIDS death will lead to 0.320858 decrease in Human Development Index. This shows that HIV has a negative impact on Human Development Index. A unit increase in GDP per capita will lead to 0.224107 increase in Human Development Index. Also one unit increase in Employment will lead to 0.4735 increase in Human Development Index and finally a unit increase in growth rate per capita will lead to 0.00346 increase in Human Development Index.

D(EMP) = -103915.1 – 2.836358HIV
(-3.8657) (-6.8392)

From the result a unit increase in Total number of AIDS death will lead to 2.836358 decrease in employment. This shows that HIV has a negative impact on employment.

5. Conclusion and Recommendations

This study examined the impact of HIV/AIDS on the economic development of Nigeria. The research has focused on the factors that are necessary to sustain production and employment under conditions of HIV/AIDS. There is no doubt that HIV/AIDS is a reality in Nigeria and its widespread and existence as well as magnitudes pose a real threat to the country's economic growth and development. HIV/AIDS hampers macroeconomic stability in Nigeria via lowered productivity, reduced savings, high level of dependency ratio, overstretched public expenditure, etc. Beyond its effects on GDP growth, HIV/AIDS has exacerbated income inequality and increased poverty in the country. Consequently, HIV/AIDS have over the years, been compromising Nigeria's macroeconomic performance. All these, point to the urgent need to speed-up efforts to track down or bring to a perfect halt, the rising and spread of HIV/AIDS in the country. Unless this is done, HIV/AIDS will spell the worst havoc to Nigeria's economy sooner than expected.

Recommendations

Based on the empirical analysis, the recommendations of the study are stated as follows,

a) Government at all levels should intensify their effort to reduce the number of new infected persons. This should include increased education and information campaign especially in the ill-informed rural areas to end the silence, stigma and indifference to HIV/AIDS. To achieve this, religious leaders, village heads, transport union etc. should be included in the campaign.

b) Government and donor agencies such as GHAIN, USAID, UNAIDS etc. should use religious leaders to preach the campaign of voluntary HIV test and counseling before marriage.

c) Finally, government and NGOs/CBOs/FBOs should give all the necessary support to the various health research institutes in developing HIV vaccine. In addition, governments and other donor agencies should expand their anti-retroviral drugs distribution program to incorporate all identified HIV infected persons. Therefore, more sites should be established in rural areas to facilitate the distribution of the ARD.

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Monetary Policy and Unemployment Rate in Nigeria: 1990 -2016

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Abstract

The main objective of this study was to further investigate the presence of causality from monetary policy to unemployment in Nigeria. Quarterly time series data between 1990 to 2016 were sourced from the CBN and NBS. Unemployment (U) was made the regressand and monetary policy instruments as the regressors. The monetary instruments used were broad money supply (M2), monetary policy rate (Mpr), cash requirement ratio (Cr) and Liquidity ratio (Lr). Inflation (P) and gross domestic product (Y) were added to represent macroeconomic variables. The techniques of vector autoregressive model (VAR) and granger causality were employed. Findings from the study showed that monetary policy instruments did not individually granger cause unemployment rate but its joint instruments did; The study divulged that unemployment did not respond significantly to changes in monetary policy. The study suggests that when combating unemployment menace, the monetary authority should employ all four instruments at the same time since joint uses of these instruments are more effective. The CBN should strive to make Nigeria a cashless economy through the general use of Automated Teller Machine (ATM) and Point of Sales (POS), for more patronage of banking services.

Keywords: Unemployment, Monetary policy, Money supply, GDP, Liquidity Ratio, Cash reserve Ratio
JEL Codes: E51, E52

1. Introduction

Despite the Nigerian government's tremendous effort to influence economic activities using an expansionary fiscal policy framework, unemployment has remained a challenging phenomenon in Nigeria. High level of unemployment has always been recorded in the country over the years.

Reducing unemployment is an important macroeconomic goal of any economy as it has significant impact on government ability to generate revenue through income tax from employed workers. Also unemployment tends to reduce national production level and economic activity generally. When unemployment is high, fewer people are paying taxes to the government. Equally, that means fewer people with disposable income to spend on goods and services which affect aggregate demand. Lower consumer spending makes it more difficult for businesses to thrive and improve which dampens economic activity (Anderton 2008). In countries where unemployment benefits are given, it means more spending on the part of the government. Hence, countries over the centuries have used different policies to solve this economic menace that causes psychological, economic, social and security threat, as obtainable presently in Nigeria (Babalola 2013). It is pathetic to observe that young working class persons with great potentials are jobless. They use their potentials elsewhere causing crises in the economy most especially their engagement in social vices. Nigerian youths are vibrant and ready to work but the system is yet to provide any work for them or create an enabling environment for entrepreneurship and skill development and use of these skills in productive activities.

Monetary Policy, being one of the macroeconomic policies, refers to the specific actions taken by the Central Bank (Monetary Authority) to regulate the value, supply and cost of money in the economy

with a view to achieving predetermined macroeconomic goals (CBN 2011). The Central Bank of Nigeria, like other central banks in developing countries, seeks to achieve price stability through the management of money supply.

In Nigeria, the major objectives of monetary policy include the attainment of price stability, sustainable economic growth and full employment. However, in pursuing these objectives, the CBN recognizes the existence of conflicts among objectives necessitating some sort of trade-offs which could be inevitable. The targets of monetary policy are the operational targets, the intermediate and the ultimate targets. The bank adjusts the operational targets (reserve money) over which it has significant direct control to influence the intermediate target (broad money supply, M_2) which has impact on the ultimate objective of monetary policy. Monetary policy stance could either be contractionary when it seeks to reduce the level of money supply in the economy or expansionary to stimulate economic activity, usually in a recession (CBN 2014).

In formulating monetary policy, the monetary authorities usually set targets for variables whose values, the policy maker wants to change. The targets could be ultimate (final goals, such as output/its deviation from the full-employment level, inflation rate or the price level or its deviation from a desired level, and employment) intermediate (variables that the central bank seeks to influence such as money supply or interest rate), or operating (variables the central bank can influence directly using the instruments at its disposal). However, since a given variable can fall in any of these categories, there is no hard and clear-cut separation between these categories. In addition, variables that provide information on the current and future state of the economy have to be identified.

According to National Bureau of Statistics (NBS), it is not easy to measure the rate of unemployment because of the conceptual problems of defining who is employed, unemployed or underemployed. Employment refers to the number of people who work for pay in cash or kind, work on their own account or are unpaid family workers. Unemployment figures include those out of work, able to work and looking for a job through recognised channels. This definition should be extended to include those unemployed persons who give up job-seeking out of frustration and retrenched or laid-off persons. The subsistence economy of the rural sector often creates the impression that unemployment is wage unemployment and that it is an urban phenomenon (NBS, 2011).

The main reason behind this study is to investigate whether monetary policy instruments cause unemployment rate in Nigeria within the period 1990-2016. Also the study shall divulge which instruments causes unemployment most in order to be used frequently by policy makers in the economy. We shall examine whether unemployment response to monetary policy instruments is significant or not.

2. Review of Literature

Basically, there are two broad theories on monetary policy as it affects unemployment. They are the Classical and Keynesian. Off-shoots to these are the New-classical, Neo-Keynesian and Monetarist, among others that hover around the broad theories.

To the Classicals, a change in money supply does not affect the real variable such as output, employment and income. Therefore, money is neutral in its impact on the economy as a whole. Their analysis is based on a direct, proportional and mechanical relationship between money and price level. It says if the quantity of money increases, the price level will also increase in the same proportion. The relationship is based on the Quantity Theory of Money equation which shows that the supply of real cash balances (M/P) equals the demand for real cash balances (VT) (Jhigan 2010). To expatiate on this, the Classicals specify two channels through which monetary policy changes are transmitted to the real sector such as output and unemployment rate of the economy - Direct and indirect mechanism.

Direct Mechanism: This is based on the long run equilibrium of demand for and supply of money. If money supply is raised, it leads to increase in the supply of actual money balance (M/P) of the public which will exceed the demand for them, that is, actual money holdings are more than those desired by the people relative to their expenditure and wealth. They develop a tendency to spend their excess money by buying more consumer durable goods and perhaps financial assets. These in turn, increase the demand for goods and services, and since the level of output cannot increase, the price level increase will reduce the supply of real cash

balances (M/P) until the money balances are equal to the people's desire to hold money. Therefore, the level of employment is not affected by increase in money supply but only price level that rises.

Indirect Mechanism: This operates through the use of money interest rate and the involvement of commercial banking system. When the monetary authority (central bank) makes open market purchases of government securities, it increases the commercial banks reserves. The banks lend more to the public which reduces the money rate of interest. The reduction in market rate relative to real rate creates disequilibrium between the actual and desired stock of real capital. This encourages businessmen to invest more in new capital assets, which in turn, increases the aggregate demand for money that is financed by new money creation. This will however not lead to increase in output but rather increase in money supply.

This theory shows that money is neutral in equilibrium and it does not affect real aggregate demand, output, employment and income, but it is non-neutral in the transition period when it affects the real magnitude. However in the long run, only nominal magnitudes are affected when the money supply changes and money is neutral.

To the Keynesians, changes in money supply have real effect on aggregate expenditure, output, employment and income indirectly through change in interest rate. If the central bank increases the money supply by open market purchase of government bonds, it lowers the interest rate which in turn increases investment and expenditure, thereby raising the national income (Keynes 1936).

The mechanism through which money supply is transmitted into the output and employment level is the Asset Effect. Holding income level unchanged, when money supply is increased, it causes people to spend their excess holdings of money on bonds. This means an increase in the demand for bonds and a rise in their prices. A rise in the prices of bonds brings down the money interest rate. This, in turn, raises the speculative demand for money. People now prefer to keep their money in cash to lending it at a low interest rate. This is called the Liquidity Preference Effect. Fall in interest rate and increases in speculative demand for money stimulate investment since the cost of investment reduces as interest rate falls. Increase in investment (which will also increase employment and output) raises the level of income through the multiplier process. The increased income generates additional savings equal to the increase in investment and equilibrium will be restored in the commodity market. However, a rise in real income or output brings about diminishing returns to labour, thereby raising per unit labour cost and the price level. This mechanism is called the Cost of Capital channel and it summarily has four stages as in figure 1.

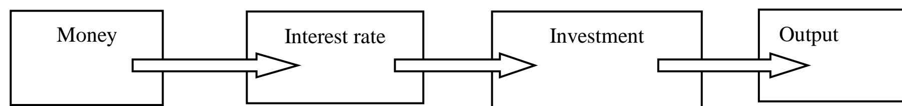


Figure 1: Transmission Mechanism of the Keynesians.

Where, with increase in money supply, interest rate falls and investment and income rise. The rise in price level raises nominal income that leads to an increase in the transactionary and precautionary demand for money, thereby, bringing a "feedback" effect on the economy. Increase in transactionary and precautionary balances, in turn, reduces the speculative balances.

Transmission Mechanism between Monetary Policy and Unemployment in Nigeria

In Nigeria, the monetary policy transmission mechanism is such that shows the relationship between changes in the monetary policy instruments and the real variable such as prices of goods and services, output and employment. There exist different channels in which this ffect takes place. Among these are the interest rate channel, the credit channel, the exchange rate channel, the assets mechanism and the inflation rate channel.

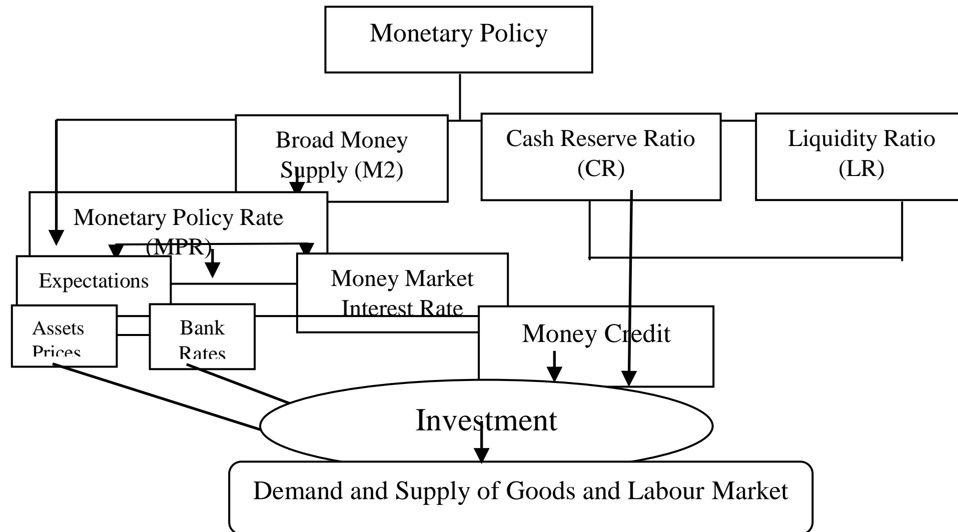


Figure 2: Monetary Policy Transmission Mechanism adapted from CBN (2011).

According to Ndekwu (2013) and CBN (2014), it has been generally accepted that the interest rate channel is the most effective channel of monetary policy transmission to the real sector. However, this may not necessarily be true. Therefore the study adapts the transmission mechanism of monetary policy on unemployment rate from CBN (2011) as shown in figure 2.

The monetary policy in Nigeria is conducted under the monetary policy framework, that is, the institutional arrangements/conditions under which monetary policy decisions are made and executed. The Central Bank conducts monetary policy primarily to achieve price stability using monetary policy rate (MPR) as a prime instrument that signals the direction of interest rates as nominal anchor (CBN, 2013). The diverse channels through which monetary policy actions have impact on real variables can be described as shown in Figure 2. It shows that monetary policy rate is a key instrument in central bank's intervention as it affects three rates: Treasury bill rate; prime lending rate and interbank rate.

Figure 2 shows how changes in MPR, M2, CR and LR transmit and affect other variables until they finally have impact on demand and supply of goods and services and the labour market. From the figure, the CBN has direct control on these four instruments among others. When the monetary authority increases money supply, it reduces the anchor interest rate (monetary policy rate) which will cause a fall in market interest rate. Fall in this interest rate will induce investors to borrow money to invest as cost of investment is already low. As businessmen invest more, output and employment are enhanced in the goods and labour markets. Same effect is experienced when the MPR is directly reduced. Alongside is the assets effect. When market interest rate falls, demand for bond increases as people prefer to hold excess fund from increase in money supply in asset form which will result into increase in the prices of bond. Also from the figure, when market interest rate falls, people prefer to hold their excess cash to purchasing more of consumer goods, making the demand for goods and services to increase. When this happens, it serves as market booster for investors to increase investment thereby increasing output and employment in the real sector. When the CR and LR are reduced, commercial bank would have more money credit to give out as loan to

investors which will in turn lead to improved demand and supply of goods and labour market.

Decisions of the CBN are also affected by some shocks outside the powers of the bank like changes in fiscal policy, changes in the global economy and risk premia.

The study by Friedman and Schwartz (1963) used evidence from over hundred years of U.S. data to show clear evidence that money supply changes, lead, and therefore granger causes changes in real economic activities like output, income and unemployment. In line with this, the evidence as well as intuition, seems to indicate that money supply growth is positively related to output growth. Therefore, and monetary policy can be pursued in appropriate cases to influence output and unemployment fluctuations (Handa, 2009).

Loganathan, Ishak and Mori (2012) analyze the integration and dynamic interaction between monetary shock and overall unemployment in Malaysia for the period of 1980-2010. The study applied various unit root tests, Gregory-Hansen cointegration test, VECM and Granger causality test while considering the possibility of the structural break. The results show a structural break in the middle of 1990s with a long run co-integration between monetary shock and unemployment. However, there was no causality relation between both variables.

As mentioned earlier, one of the few available studies for Nigeria was carried out by Nwosa and Saibu (2012). They investigated the transmission channels of monetary policy impulses on sectoral output growth in Nigeria. They employed the unrestricted VAR and the Granger causality on quarterly data that spanned the period 1986 – 2009. They found interest rate and exchange rate as the most effective monetary tools to influence sectoral output growth in Nigeria.

Nampewo, Ezra and Musa (2013) investigated the sectoral effects of monetary policy in Uganda over the period 1999 to 2011 via the interest rate, bank credit and the exchange rate channels by employing pair-wise granger causality test and recursive VAR. They analyzed sectors adjudged to be the key drivers of Uganda's GDP growth namely; agriculture, manufacturing and service sectors. They found evidence that a positive shock in exchange rates result in increase in output of agriculture and service sectors, while the output in the manufacturing sector declined. They found evidence that the exchange rate channel is the most effective monetary policy transmission channel to all the three sectors studied, while the interest rates and bank credit channels remain relatively weak, especially within the manufacturing sector.

Other related works that are most recent include those of Ezeji and Micheal (2013), Ogar, Nkamare and Emori (2013), Aliero, Ibrahim and Shuaibu (2013), James and Patrick (2014) and Amassoma and Esther (2015) among others.

Essien *et al* (2016) examined the link between unemployment and monetary policy in Nigeria using a vector autoregressive (VAR) framework for the period 1983q1 – 2014q1. All the variables used as proxy in the model jointly granger cause unemployment. Our study is different in that, its data were from the period after SAP, more monetary policy instruments than those of Essien *et al* (2016) and has an extension of period.

3. Model specification

Precisely, the study adapts the model of Essien *et al* (2016). Thus, the models will include the following after each variable has undergone stationary test:

The basic model for the single equation shall be

$$ꭒ = f(M_2, MPR, CR, LR, P, Y) \qquad 3.1$$

Y is national output, ꭒ is unemployment rate, M_2 is broad money supply, MPR is monetary policy rate, CR is cash reserved requirement, LR is liquidity ratio, and P is inflation rate.

The VAR model consists of equations of ꭒ, MPR, CR, LR, M_2, P and Y. All the variables are determined endogenously. Therefore, the generalized VAR model is made up of a set of *K* endogenous variables $\Omega_t = (\Omega_{1t} \ldots\ldots \Omega_{kt})$ for k=1, ⋯, *K* and is defined as

$$\Omega_t = c + \alpha_1 \Omega_{t-1} + \alpha_2 \Omega_{t-2} + \cdots + \alpha_p \Omega_{t-p} + \varepsilon_t \qquad 3.2$$

where Ω_t is a $k \times 1$ column vector representing natural log of the time series variables of interest expressed as a function of its past (lagged) values and past values of the other variables, c is a k x 1 vector of constants (intercept), αi are (K x K) coefficient matrices (for every i = 1,...p) and ε_t is a k x 1 vector of error terms with the following properties:

$E(\varepsilon_t)=0$; $E(\varepsilon_t\varepsilon'_t)=\Omega$ and $(\varepsilon_t\varepsilon'_t-k)=0$.

Choosing a suitable order *p* using the model order selection criteria, VAR is estimated and then tested for stability of the process by evaluating the root of characteristic polynomial.

It is expected (*a priori* expectation), following the above specification of equation 1, that when money supply (M_2) increases, economic activity improves and unemployment rate (ue) reduces. So M_2 has a negative relationship with unemployment (ue). As for interest rate (MPR), when it is cut, cost of investment goes down and more investors will invest thereby employing more workers. Unemployment reduces by so doing. As such, interest rate has a positive relationship with unemployment rate. When the central bank intends to carry out a tightening monetary policy, it will increase cash reserved requirement (CR) and liquidity ratio (LR). The effect is that commercial banks will not have much cash to give investors as loan. Investors will reduce investment and thereby reduce employment. Thus, they have a positive impact on unemployment. On inflation (P), it has already been proven that inflation has a negative correlation with unemployment following the Phillip curve theory. Output (Y) increase will mean employing more labour and as such reducing unemployment. Thus output has a negative connection with unemployment.

Summarily, our *a priori* expectations are:

$\alpha_1, \beta_1, \beta_2 < 0 \quad \alpha_2 - \alpha_4, > 0$

Equation 3.1 translates to an econometric model as

$$ue = \theta + \alpha_1 M_2 + \alpha_2 MPR + \alpha_3 CR + \alpha_4 LR + \beta_1 P + \beta_2 Y + u \qquad 3.3$$

The study employs Ganger Causality using the model in equation 1 which is based on the following regression equations

$$y_t = a_1 + \sum_{i=1}^{n} \beta_i \chi_{t-i} + \sum_{j=1}^{m} \gamma_j y_{t-j} + e_{1t}$$
$$x_t = a_2 + \sum_{i=1}^{n} \theta_i \chi_{t-i} + \sum_{j=1}^{m} \delta_j y_{t-j} + e_{2t} \qquad 3.4$$

where x and y represent the variables for estimation. The study only carries out a unidirectional causality to suit the purpose of the research work.

4. Empirical Results

Pairwise Correlation Matrix

Table 1 showcases the correlation matrix of the relationship of the variables. LM2, LP and LY show a weak and negative relationship with LU, while LMPR, LCR and LLR also show a weak positive relationship with LU.

Table4. 1 Correlation Matrix

	LU	LM2	LMPR	LCR	LLR	LP	LY
LU	1						
LM2	-0.06999	1					
LMPR	0.250104	0.152827	1				
LCR	0.159858	0.029196	0.376897	1			
LLR	0.167754	0.130664	-0.07232	-0.30946	1		
LP	-0.03813	0.052478	-0.16553	-0.10915	-0.24076	1	
LY	-0.03737	0.01365	-0.09126	0.101242	-0.15199	0.183889	1

Source: Author's Extract gotten from E-Views 9 analysis.

Result of Unit Root Test

The two test statistics used are Augmented Dickey-Fuller (ADF) and Phillip Peron (PP). ADF and PP have their null hypothesis of presence of unit root. Unit root tests results are presented on tables 2 and 3.

Table 4.2: ADF Test

Variables	At Level	Probability	At 1st Diff.	Probability
Lu	-1.158451	0.6902	-8.411104***	0.0000
Lm2	-2.606539	0.0948	-11.15623***	0.0000
Lmpr	-2.192743	0.2102	-7.955903***	0.0000
Lcr	-2.319859	0.1677	-3.751216***	0.0046
Llr	-4.075763***	0.0016	-	-
Lp	-2.936952**	0.0445	-	-
Ly	-2.069144	0.2576	-10.47185***	0.0000

*** denotes significance at 5% level; *** denotes significance at 1% level.*
Source: Author's Extract gotten from E-Views 9 analysis.

All the two statistics show that LU, LMPR, LCR, LM2 and LY are not stationary at 1 and 5% level of significance as their probabilities are greater than 0.05, at level, except for PP which shows that LM2 is stationary at level. Since one of the two tests reveals that LM2 is not stationary at level, we accept that LM2 is not stationary at level. At first difference, all the variables LU, LMPR, LCR, LM2 and LY are stationary at 1% significant level. LLR and LP are however stationary at level at 1 and 5% level of significance.

Table 4.3 PP Test

Variables	At Level	Probability	At 1st Diff.	Probability
Lu	-1.379688	0.5897	-8.584754***	0.0000
Lm2	-2.900715**	0.0486	-11.17804***	0.0000
Lmpr	-1.977866	0.2962	-7.781185***	0.0000
Lcr	-1.416296	0.5718	-10.82020***	0.0000
Llr	-3.874972***	0.0031	-	-
Lp	-2.940935***	0.0441	-	-
Ly	-2.185382	0.2128	-10.47274***	0.0000

*** denotes significance at 5% level; *** denotes significance at 1% level.*
Source: Author's Extract gotten from E-Views 9 analysis.

VAR Estimation

In employing Vector Auto-Regression (VAR) and Error Correction (VEC), there is usually issue with lag selection most suitable to give acceptable results. The study employs VAR lag order criteria as a way of reducing the challenge.

Result of VAR Lag Order Selection Criteria

Table 4 presents the result of VAR lag order selection criteria. It shows that for the VAR model, the optimal lag length of 1 is selected based on Schwarz Information Criterion (SC), Final Prediction Error (FPE), Akaike Information Criterion (AIC), and Hannan-Quinn information criterion (HQ). However based on Sequential modified LR test statistics, 4 lag is selected. The study will employ 1 lag and 4 lag, and then compare which of them will give a better result.

Table4. 4 VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	263.62	NA	1.62e-11	-4.9830	-4.8040	-4.9105
1	392.38	237.50	3.44e-12*	-6.5317*	-5.0992*	-5.9515*
2	426.49	58.28	4.65e-12	-6.2426	-3.5567	-5.1547
3	473.99	74.70	4.95e-12	-6.2134	-2.2741	-4.6178
4	523.18	70.68*	5.25e-12	-6.2172	-1.0245	-4.1140

** indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion; Source: Author's Extract gotten from E-Views 9 analysis.*

Tables 5.1, 5.2, 5.3 and 5.4 depict the VAR Granger causality test result at three different lag periods – 1, 4, and 5 lag periods. Using the Block Exogeneity Wald test, 1 and 4 lags are selected by the criteria used in Table 4. At 1 and 4 lag periods, Tables 5.1 and 5.2 show that DLM2, DLMPR, DLCR, LLR, LP and DLY do not granger cause DLU, individually and jointly as directed by their respective probabilities.

Result of VAR Granger Causality Test

Table 5.1: VAR Granger Causality Test at Lag 1 of the model

Dependent variable: DLU			
Excluded	Chi-sq	Df	Prob.
DLM2	0.232533	1	0.6297
DLMPR	0.033642	1	0.8545
DLCR	0.074574	1	0.7848
LLR	0.609709	1	0.4349
LP	0.390064	1	0.5323
DLY	0.009470	1	0.9225
All	1.500787	6	0.9594

Source: Author's Extract gotten from E-Views 9 analysis.

Table 5.2 VAR Granger Causality Test at Lag 4 of the model

Dependent variable: DLU			
Excluded	Chi-sq	Df	Prob.
DLM2	3.148814	4	0.5332
DLMPR	0.041685	4	0.9998
DLCR	2.068928	4	0.7231
LLR	7.510134	4	0.1113
LP	0.716721	4	0.9493
DLY	0.305926	4	0.9894
All	12.39980	24	0.9750

Source: Author's Extract gotten from E-Views 9 analysis.

At 5 lag periods on Table 5.3, the only individual effect of LLR on DLU is significant at 1% level as its probability shows 0.0000 which is the only monetary tool that is significant. The overall effect of all the variables on DLU is also significant at 1% as indicated by the chi-square (64.29674) and probability (0.0003).

Table 5.3 VAR Granger Causality Test at Lag 5 of the model

Dependent variable: DLU			
Excluded	Chi-sq	Df	Prob.
DLM2	2.269844	5	0.8107
DLMPR	1.561262	5	0.9059
DLCR	4.980742	5	0.4182
LLR	54.74115	5	0.0000
LP	1.643666	5	0.8959
DLY	1.682896	5	0.8910
All	64.29674	30	0.0003

Source: Author's Extract gotten from E-Views 9 analysis.

Table 5.4 VAR Granger Causality Test at Lag 5 (Monetary tools only)

Dependent variable: DLU			
Excluded	Chi-sq	Df	Prob.
DLCR	4.363480	5	0.4984
DLM2	1.294491	5	0.9355
DLMPR	4.160872	5	0.5265
LLR	58.05755	5	0.0000
All	66.89101	20	0.0000

Source: Author's Extract gotten from E-Views 9 analysis.

Also when only DLM2, DLMPR, DLCR and LLR, which represent monetary policy tools,, are run, they are found to jointly granger cause DLU as shown on table 5.4 apart from LLR that individually ca uses DLU. These are exhibited by their respective probabilities.

Result of VAR Estimates

The result of VAR estimates are presented on Table 6 at 1 lag selected by the SC, AIC, HQ and FPE criteria on Table 4. Being more particular on DLU as dependent variable as shown on the second column from the left, DLU responded negatively to DLM2, LLR, LP and DLY while it responded positively to DLMPR and DLCR. The values of the variables are in logarithm which explains the responsiveness of the dependent variable (DLU) to changes in the independent variables (DLM2, DLMPR DLCR, LLR, LP and DLY). From table 6, a 1% increase in DLM2, LLR, LP and DLY, on the average, will lead to 11.1%, 4.5% and 1.4% reduction in DLU meaning that these variables have negative impact on DLU. A 1% increase in DLMPR and DLCR, on the average, will lead to 3.2% and 2.0% increase in DLU. However the results do not indicate any significant impact, as their t-statistics in parenthesis are less than 2.

Table 6 VAR Estimates

Variable	DLU	DLM2	DLMPR	DLCR	LLR	LP	DLY
	0.22	0.08	0.29	1.43	1.24	0.34	0.23
	(0.2)	(0.10)	(0.15)	(0.35)	(0.29)	(0.73)	(0.17)
C	[0.9]	[0.07]	[1.88]	[4.01]	[4.26]	[0.46]	[1.29]
	0.18	0.01	0.03	0.04	0.02	-0.07	0.03
	(0.1)	(0.04)	(0.06)	(0.14)	(0.11)	(0.29)	(0.07)
DLU(-1)	[1.8]	[0.37]	[0.55]	[0.32]	[0.18]	[-0.23]	[0.53]
	-0.11	-0.07	0.09	0.31	0.19	1.60	0.26
	(0.2)	(0.09)	(0.14)	(0.33)	(0.27)	(0.68)	(0.16)
DLM2(-1)	[-0.4]	[-0.78]	[0.65]	[0.93]	[0.71]	[2.32]	[1.56]
	0.03	-0.06	0.20	0.25	0.17	-0.264	-0.007
	(0.1)	(0.07)	(0.10)	(0.24)	(0.20)	(0.51)	(0.12)
DLMPR(-1)	[0.1]	[-0.83]	[1.89]	[1.04]	[0.88]	[-0.51]	[-0.06]
	0.02	-0.02	-0.004	-0.19	-0.20	0.17	-0.03
	(0.07)	(0.03)	(0.04)	(0.10)	(0.08)	(0.21)	(0.05)
DLCR(-1)	[0.2]	[-0.64]	[-0.09]	[-1.81]	[-2.35]	[0.81]	[-0.65]
	-0.04	0.01	-0.08	-0.37	0.67	-0.01	-0.05
	(0.0)	(0.02)	(0.03)	(0.08)	(0.07)	(0.18)	(0.04)
LLR(-1)	[-0.7]	[0.61]	[-2.17]	[-4.19]	[9.33]	[-0.07]	[-1.19]
	-0.01	-0.003	0.005	-0.01	-0.01	0.83	0.004
LP(-1)	(0.0)	(0.007)	(0.01)	(0.02)	(0.02)	(0.05)	(0.01)

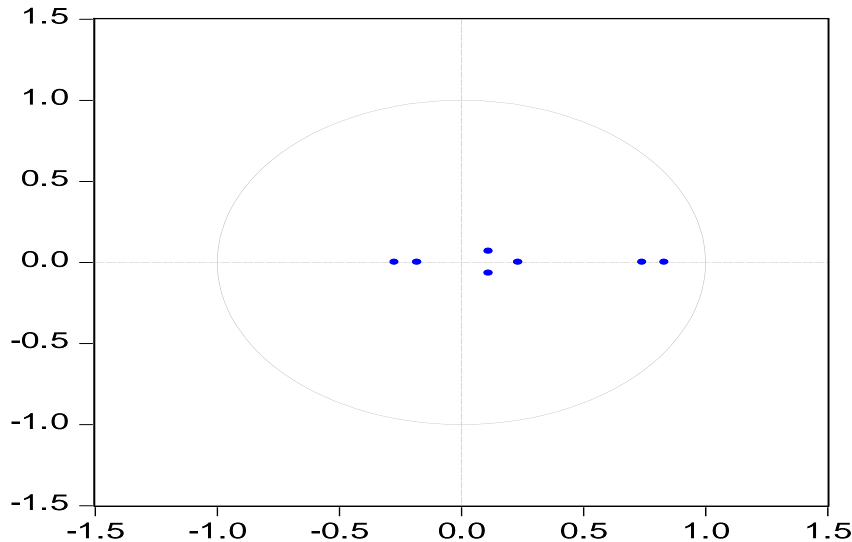
Variable	DLU	DLM2	DLMPR	DLCR	LLR	LP	DLY
	[-0.6]	[-0.46]	[0.46]	[-0.47]	[-0.53]	[15.60]	[0.31]
	-0.01	0.071	0.02	-0.07	-0.11	0.60	-0.04
	(0.1)	(0.05)	(0.08)	(0.20)	(0.16)	(0.41)	(0.10)
DLY(-1)	[-0.0]	[1.20]	[0.32]	[-0.37]	[-0.68]	[1.46]	[-0.46]
R-squared	0.05	0.211	0.46	0.39	0.74	0.78	0.29
Adj. R-squared	-0.01	-0.08	0.25	0.16	0.65	0.70	0.02
F-stat	0.74	0.71	2.26	1.72	7.85	9.86	1.11
Akaike AIC	-0.87	-2.40	-1.87	-0.02	-0.67	1.49	-1.45
Schwarz SC	-0.65	-1.66	-1.13	0.71	0.06	2.23	-0.71

Source: Author's Extract gotten from E-Views 9 analysis.

The third column from the left shows the coefficient results of DLM2 as the dependent variable and others as independent variables. It indicates that DLMPR, DLCR and LP lagged 1 period have negative impact on DLM2, meaning that 1 per cent increase in DLMPR, DLCR and LP, on the average, will have 0.06, 0.02 and 0.003 per cent reduction in DLM2. The impacts are found to be insignificant as their standard errors are greater than half of their coefficients, and in the same vein, their t-statistics are far less than average of 2. LLR and DLY (1 lagged period) exhibit a positive insignificant impact on DLM2.

Result of Stability of VAR Estimates

Figure 3 shows the graphical representation of the VAR stability check result. When the dots are outside the circle, the VAR is said to be unstable, but if otherwise, it is stable. The figure indicates that the VAR satisfy the stability condition check since the dots are located within the circle.



Source: Author's Extract gotten from E-Views 9 analysis.
Figure 3: VAR Stability Test.

VAR Residual Test

Table 7: VAR Residual Test

Test	Null Hypothesis	t-stat	Probability
Langrage Multiplier (LM)	No serial correlation	49.66336	0.4467
White (Ch-sq)	No conditional Heteroscedasticity	392.0	0.1394

Source: Author's Extract gotten from E-Views 9 analysis.

Table 7 showcases the diagnostics of VAR residuals. The null hypothesis is that there is no serial correlation in the error terms. In order to authenticate the parameter assessment of the outcomes achieved by the VAR model employed in this study, diagnostic checks were performed. The model was tested for fitness using two main tests: the Langrage Multiplier (LM) test for serial correlation; and the White test for heteroskedasticity. Results presented in Table 7 suggest that there is no serial correlation and there is no conditional heteroskedasticity in the unemployment model since the probabilities show greater values more than 0.05. We accept the null hypotheses of no serial correlation and homogeneity of the residuals.

5. Conclusions and Policy Implication/Recommendations

The study researched on analysis of the impact of monetary policy on unemployment rate in Nigeria: between 1990Q1 and 2016Q4. This section explains the findings of the study with support/arguments of empirical studies regarding the topic.

The study made use of broad money supply (M2), monetary policy rate (MPR), cash reserve ratio (CR) and liquidity ratio (LR) to represent the monetary policy instruments as they were often used during the period under study. It also added some macroeconomic variables of inflation rate (P) and output (Y) proxied by gross domestic product. Both the monetary policy instruments and the macroeconomic variables were used as regressors and unemployment rate as regressand.

It could be concluded that there is moderate relationship between monetary policy and unemployment rate in Nigeria. Monetary policy instruments of broad money supply (M2), monetary policy rate (MPR) and cash reserve ratio (Cr) did not individually granger cause unemployment rate but liquidity ratio (Lr) did. When the instruments are joint employed, they indeed granger caused unemployment. Also, unemployment rate responded negatively to changes in M2, LR, P and Y, while it responded positively to its own change and changes in MPR and CR. However, the response of individual instruments was not significant.

The study suggests that when combating unemployment menace, the monetary authority should employ all four instruments at the same time since a joint use of these instruments is more effective. The CBN should strive to make Nigeria a cashless economy through the general use of Automated Teller Machine (ATM) and Point of Sales (POS), as low patronage of banking services is a major impediment to effective control of money supply.

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Exchange Rate Regimes and Economic Performance in Nigeria: 1970 – 2015

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Abstract

This paper investigates the relationship between exchange rate regimes and economic growth in Nigeria.The paper relies on the Generalised Methods of Moment (GMM) simultaneous equation and the Granger causality test to investigate the impact of exchange rate regimes on economic growth in the two regimes of exchange rate policies implemented in Nigeria between 1970 and 2015 namely, the regulated (1970-1985), the deregulated (1986-2015) as well as the combined period. (1970-2015). The study showed that in the period of exchange rate rgulation1970-1985, exchange rate was positive but insignificant in driving economic growth. On the other hand a negative and significant relationship was observed between exchange rate and economic growth in the de- regulated regime (1986-2015) and the overall period of 1970-2015. From the study it could be inferred that government intervention is necessary in determining the exchange rate regime that will drive a meaningful economic growth in Nigeria. We therefore recommend a review of the current exchange rate policy of complete deregulation. We suggest instead of a complete float system, a policy of more conscientious implementation of the guided deregulation to halt the free-fall in the external value of the Naira that has become rife under the free- float system with damaging consequences for economic growth.

Keywords: Exchange rate, GDP
JEL Codes: H12, E13

1. Introduction

Globalization which has resulted in increased trade and interaction among countries has given rise to increased demand for and supply of foreign exchange. Foreign exchange is any currency other than the domestic currency that is used in the settlement of international transactions. It can be defined as the conversion of a country's currency into that of another. Foreign exchange is the value of a given domestic currency stated in terms of another currency.

In order to invest in stocks, shares and also to import goods from other countries, people demand for foreign exchange. Similarly foreign exchange is supplied when people of a domestic economy export goods and services to other countries, receive loans, aids, remittances or when foreigners buy shares and stocks from people and organizations in the domestic economy. According to Jhingan (2003) foreign exchange is a reflection of the strength of a currency when measured against another currency.

Exchange rate therefore can be seen as the relative price of foreign currencies compared to their domestic counterparts. It helps in determining the strength of a country's participation in international trade. Oloyode (2002) saw exchange rate as the price of one currency in terms of another. It becomes imperative for countries to manage the rate at which their currency exchanges for other currencies if they must attain their macroeconomic goal of growth

The exchange rate of a currency can either be administratively determined (regulated) or allowed to be determined by market forces (Deregulated). In a regulated regime the value of a currency can be lowered or devalued in order to reduce import and increase export thereby correcting a balance of payment deficit. Here it means that government

fixes the rate at which the domestic currency exchanges for its foreign counterparts.

However deregulation entails the reduction or total elimination of Government intervention in the determination of the rate at which the domestic currency exchange for her foreign counterparts. It is an instrument of financial sector liberalization.

Financial liberalization entails a deliberate and systematic removal of regulatory controls, structures and operational guidelines that may be inhibitive of orderly growth, competition and efficient allocation of resources in the financial system. With regards to foreign exchange, deregulation entails allowing the rate at which the domestic currency exchange for her foreign counterpart to be market driven, that is to be determined by market forces of demand and supply. It should be noted however that complete deregulation has the potential effect of generating excessive fluctuations. This is evidence in the short term capital flows "Hot Money" (Excessive short term inflow and outflow of foreign capital resulting in shocks or destabilizing impacts on the domestic economy) which in itself is harmful to growth.

Since Nigeria is an open economy, the need to carry out trading and diplomatic activities with other countries of the world makes it pertinent for her to manage the rate at which the naira is exchanged for other currencies.

Foreign exchange rate management in Nigeria has undergone transformation over the years. It has moved from officially pegged rate between 1970 and 1985 to a market driven rate. This change in the regime of foreign exchange management has impacted on the economic growth performance in the country. It is worthy at this point to note that currency deregulation is different from currency devaluation. The value of a currency can appreciate or depreciate in a deregulated regime depending on the demand and supply factors. Devaluation of a currency, on the other hand, refers to the lowering of the external value of the domestic currency in relation to its foreign counterpart where it is administratively determined. The term devaluation is appropriate for use in a regulated regime of foreign exchange management.

Since 1986 till date, the Naira exchange rate is determined at the foreign exchange market on the basis of demand and supply but between 1970 and 1985, it was administratively determined or regulated. The dollar is the intervention currency in the market while the exchange rate of other currencies is based on the cross reference to the Naira – dollar exchange rate CBN(2015). In practice, foreign exchange can either be administratively determined (regulated) or allowed to be determined by market forces (deregulated). Deregulation is the reduction or total elimination of government intervention in a particular sector of the economy. Usually, this is done to bring about competitiveness and efficiency in the industry. Exchange rate deregulation is an instrument of financial sector liberalization. Liberalization can simply be said to mean a shift from direct policy and regulatory controls to a market driven behavior to set prices and to allocate resources. Financial liberalization as used here refers to the deliberate and systematic removal of regulatory controls, structures, and operational guidelines that may be considered inhibitive of orderly growth, competition and efficient allocation of resources in the financial system.

With regards to foreign exchange, deregulation entails allowing the rate at which a domestic currency exchange for her foreign counterparts to be determined by the market forces of demand and supply. Allowing exchange rate to be market-driven has the potential effect of generating excessive fluctuations. This is evidenced in short term capital flows "Hot Money" (excessive short term inflow and outflow of foreign capital resulting in shocks or destabilizing impacts on the domestic economy) which in itself is harmful to growth. Therefore, government intervention becomes needful in order to prevent these excessive fluctuations. In order to attain macroeconomic objectives of price stability, reduction in inflation rate, employment creation, attaining economic growth and maintaining external sector balances, the Government through the Central Bank always intervene to manage the generation and disbursement of foreign exchange to minimize the destabilizing impact of these short term capital flows.

Therefore the need examine impact of foreign exchange regimes on Nigeria's economic performance between 1970 and 2015 becomes imperative. The paper will also go on to disaggregate the regimes of foreign exchange in the two major foreign exchange regimes in the country namely, the regulated regime(1970-1985) and the deregulated regime (1985-2015).

The paper also sort to provide answers to the understated research questions

(a) Does exchange rate granger cause economic growth in the periods under study?
(b) Is exchange rate significant in determining GDP in the deregulated,
(c) Is exchange rate significant in determining GDP in the regulated regime
(d) Is exchange rate significant in the determining GDP in the overall period 1970-2015?

2. Literature Review

Theoretical Framework

This study has its theoretical foundation on the national income hypothesis and quantity theory of money and their extended versions. The classical Keynesian, Neo-Keynesian monetarist arguments, including the structural counter arguments, which are central to the view expressed by the proponents of the subsisting models of exchange rate determination.

Models of exchange rate determination refer to the different framework built by competing schools of thought under which the exchange rate of a currency can be determined. The models are based on body of economic theories on relationships between exchange of domestic currencies in line with that of traditional partners and factors responsible for variations in their equilibrium values. The major models of exchange rate determination according to Obansa (1991) are:

i. Traditional flow model
ii. Portfolio balance model and
iii. The monetary model

The traditional flow model relies on equilibrium in the foreign exchange market as the determining factor of the appropriate exchange rate. This is intersection between the demand for and supply of foreign exchange. This is otherwise seen as market clearing equilibrium. It is regarded as the pure or market exchange rate. The point of intersection is derived from the "Marshallian cross" which represents equilibrium in the demand and supply schedules.

The traditional flow model does not relegate the importance of money but it concentrates on forces behind demand for and supply of foreign exchange. Its central proposition is that the exchange rate or the strength of a nation's currency is influenced by relative prices, interest rates and real income.

The portfolio balance model relies heavily on the asset or portfolio market. It holds that the portfolio of wealth holders in each country simultaneously determines the exchange and interest rates. The shift in the allocation of wealth between the domestic money base, domestic public bonds and net foreign bonds in foreign currency influences the equilibrium exchange rate. Movements in domestic interest rates and fiscal operations of government to the extent that they induce movement in net foreign asset holding which in turn influence movement in the equilibrium exchange rate.

It is difficult to make accurate forecast based on this model because domestic and foreign assets are not perfect substitutes as returns on each of them differ significantly. Furthermore, while some countries are net debtors, others are net foreign creditors. The most disturbing aspect of this model is the treatment of wealth holders in isolation of the environment in which they operate.

The monetary approach to exchange rate determination is very elaborate and perhaps the most comprehensive of all the models of exchange rate. The monetary model is comprehensive because it did not only emphasize the role of money but recognizes the role of real sector as a contributing factor in exchange rate determination. The monetary model is based on three major legs. Firstly, it asserts that the equilibrium exchange rate depends on the stock equilibrium condition in each country's money market. Secondly, the monetary equilibrium condition states that the price level adjusts automatically to equate the value of nominal money stock to desired or real demand for money. The demand for money itself is a function of real income and nominal income. The movement of monetary equilibrium comparatively analyzed with that of a trading partner. An increase in money stock would induce the depreciation of the domestic exchange rate in line with trading partners' currencies while a decrease will lead to the opposite response other things being equal.

This study also bears underpinnings to the work of Mckinon (1973) and Shaw (1973). However, Patrick (1966) who published a seminal work on the financial development and economic growth; Mckinon (1973) and Shaw (1973) noted that when a financial sector is depressed, then it can only respond positively to the real sector need. But a deregulated or liberalized financial sector can be the

major propeller of economic development. They noted that a depressed financial system is characterized by the following:

(a) Administratively determined interest rate
(b) Direct control of allocation of credits
(c) Ceilings on credit expansion
(d) Undue restrictive rules in the financial

The Mckinon (1973) and Shaw (1973) thesis argued that liberalization, which should be accompanied with higher real interest rates when implemented would stimulate savings. The underlying assumption of course is that savings respond positively to changes in interest rates. The higher savings rate will stimulate high leevel of investment leading to higher economic growth.

Empirical Literature

A number of empirical work have been carried out in recent times to determine the impact of exchange rates on some key macroeconomic variable in order to assess economic performance in the country.

Ettah, Akpan, and Etim (2011) studied the effects of price and exchange rate fluctuation on Agricultural Exports in Nigeria using Error Correction Model (ECM) they found that exchange rate fluctuation and Agricultural credits affect cocoa exports in Nigeria positively. They however observed that relative price of cocoa are significantly related to the quantity of export but has a negative sign which is in line with a priori expectation.

Asher (2012) proposed that exchange rate is used to determine the level of output growth of the country. He observed that deregulation had the problem of uncertainty which maybe counter - productive and can impede international trade. This he observed may result in a decline in the living standard of the populace due to cost push inflation.Owalabi and Adegbite (2012) examined the impact of foreign exchange regimes on industrial growth in Nigeria for the period 1985 to 2005. They found out that exchange rate was significant in the determination of industrial growth in Nigeria.In a similar study, Akpan (2008) investigated foreign exchange market and economic growth in emerging petroleum based economy from 1970 – 2003 in Nigeria. He found that a positive relationship exist between exchange rate and economic growth.

However a number of other studies show that exchange rate deregulation has a negative effect on economic growth. Among such studies include Bosworth, Collins, and Yu -chin (1995) which provided evidence that in a large sample of industrial and developing countries, real exchange rate volatility hampers economic growth and reduces productivity growth. In the same vein Ubokudom (1999) examined issues surrounding the implementation of the Structural Adjustment Policy in Nigeria. He drew up the conclusion that, peculiar features of Nigeria's economy reduces the efficacy of currency deregulation in producing desired effects. From the study of the relationship between exchange rate variation and growth of domestic output in Nigeria (1971 – 1995), Ubokudom (1999) expressed growth of domestic output as a linear function of variations in the average nominal exchange rate. The same author further used dummy variables to capture the period of currency depreciation. The empirical result showed that all the coefficients of the major explanatory variables have negative signs. Meaning that exchange rate deregulation has a negative effect of domestic output growth.

In a similar study, Eme and Johnson (2012) investigated the effects of exchange rate movement on real output growth in Nigeria for the period 1986 – 2010. The result revealed that there is no evidence of a strong direct relationship between changes in exchange rate and output growth. Rather, Nigeria economic growth has been directly affected by monetary variables.

An evaluation of the literature so far reviewed shows a lack of consensus on the nature of the effect of exchange rate and/or its deregulation on output and other macroeconomic variables. As the effect of exchange rate deregulation on output growth appear to be an empirical question, therefore, it becomes imperative and apt to re-examine its impact in the context of Nigeria's growth performance. This paper therefore sets out to examine the impact of foreign exchange regimes on economic growth in Nigeria.

Although a number of research has been carried out on the subject matter, this study stands out in that it disaggregate the different regimes of exchange rate policies in Nigeria and examines the impact of changes in exchange rates as it affects economic growth performance in the different regimes (the regulated1970-1985 and the deregulated regime 1986-2015) while also examining the impact on the overall period of 1970-2015. This on its own, goes a

long way to adding value to the body of literature on the subject matter.

3. Methodology

Research design

In attempt to provide answers to the research questions, this paper employs two major estimation techniques Granger causality and Generalized Method of Moment (GMM) regression of simultaneous equation system.

The Generalized Method of Momemt system of simultaneous equation is preferred in this analysis in that it involves the use of more than one endogenous variables thereby enabling the use of as many equations as the number of endogenous variables, the endogenous variables in one equation appear as an exogenous or explanatory variable in another equation of the system. The system of equations also allows for the lagged value of the endogenous variables to be used as determinants of the endogenous variable itself. In this case, the classical OLS method of estimation may not apply because the estimators do not converge to their true population no matter how large the sample size maybe.

Pairwise Granger Causality Regression Equations

GDP per capita and Exchange Rate

$$\ln GDP_t = \sum_{i=1}^{\rho} \alpha_{1j}\, EX_{t-i} + \sum_{j=1}^{\rho} \alpha_{2j}\, lnGDP_{t-j} + \varepsilon_t \quad 1$$

$$EX_t = \sum_{i=1}^{\rho} \beta_{1i}\, lnGDPP_{t-1} + \sum_{j=1}^{\rho} \beta_{2j}\, EX_{t-1} + \varepsilon_t \quad 2$$

Money Supply and Exchange Rate

$$lnM2_t = \sum_{j=1}^{\rho} \delta_{1j}\, EX_{t-1} + \sum_{j=1}^{\rho} \delta_{2j}\, lnM2_{t-1} + \varepsilon_t \quad 3$$

$$EX_t = \sum_{j=1}^{\rho} \theta_{1j}\, lnM2_{t-1} + \sum_{j=1}^{\rho} \theta_{2j}\, EX_{t-1} + \varepsilon_t \quad 4$$

Inflation Rate and Exchange Rate

$$INF_t = \sum_{j=1}^{\rho} \xi_{1j}\, EX_{t-1} + \sum_{j=1}^{\rho} \xi_{2j}\, INF_{t-1} + \varepsilon_t \quad 5$$

$$EX_t = \sum_{j=1}^{\rho} \omega_{1j}\, INF_{t-1} + \sum_{j=1}^{\rho} \omega_{2j}\, EX_{t-1} + \varepsilon_t \quad 6$$

FDI and Exchange Rate

$$lnFDI_t = \sum_{j=1}^{\rho} \pi_{1j}\, EX_{t-1} + \sum_{j=1}^{\rho} \pi_{2j}\, FDI_{t-1} + \varepsilon_t \quad 7$$

$$EX_t = \sum_{j=1}^{\rho} \psi_{1j}\, lnFDI_{t-1} + \sum_{j=1}^{\rho} \psi_{2j}\, EX_{t-1} + \varepsilon_t \quad 8$$

$\alpha_1, \beta_1, \alpha_2, \beta_2$ = coefficients

t = time

GDP = Growth rate of real GDP
EX = exchange rate
M2 = Broad money supply
INF = Inflation rate
FDI = Foreign Direct Investment

Equations (1) an (2) the Granger causality t

$\alpha_1, \beta_1, \alpha_2, \beta_2$ = coefficients

Equations ~~of~~ the Granger causality test indicates the order of precedence of the variables and therefore shades light on the nature of the relationship between exchange rate policy regimes and Nigeria's growth performance.

Next we specify the GMM regression model which helps us to answer research question (2) what is the significance of exchange rate policy regimes (regulated and deregulated regimes) on growth performance in Nigeria

4. Findings

Granger Causality Result

The pairwise granger causality in Apendix 1 shows the relationship between real exchange rate and other macroeconomic variable used in the study. We focus particularly of the granger causality between exchange rate and growth rate of GDP per capita.

As is obvious from the table in Apendix1 and 2, exchange rate and interest rate granger caues consumer price index. Evidently too, consumer price index and inflow of foreign direct investment granger causes per capita GDP (GDPC). This result suggests that real exchange rate impact per capita output via a transmission channel. The finding did not change significantly when we iterated the granger causality estimation at lags 2 and 3. The result also shows that broad money supply (M2) neither granger cause CPI nor inflation rate. In addition the Granger test returned results which also shows that growth rate of money supply (M2G) does not granger cause consumer price index (CPI).

Instead, it is found that the growth rate of money supply granger causes growth rate of CPI, i.e., inflation rate. In other words, our granger test indicates that it is the growth rate of money supply (rather than the level value of money supply) that granger causes inflation rate. This result, thus, align with the basic proposition of the Chief Monetarist – Professor Milton Friedman – namely, that inflation is always and everywhere a monetary phenomenon.

Next, we turn to the basic issue of the significance of different exchange rate policies (regulated, deregulated and combined policy regimes) on output and per capita output performance in Nigeria. The estimation of the system GMM is implemented in three major tranches (fixed, deregulated and combined) of exchange rate policies regimes. Apendix3 presents the result of the system estimation based on the generalized method of moments (GMM) procedure for the entire sample period (1970-2015) Over the entire sample period, i.e., the period of combined exchange rate policy regimes (1970-2015), real effective exchange rate was found to be negatively related to output while money supply growth is found to be positively related to output in line with the theoretical a priori expectation. Devaluation of nominal exchange rate (assuming price stickiness and rising domestic price inflation) is expected increase nominal exchange rate and decrease real effective exchange rate (the disconnect puzzle not withstanding). Decline in real exchange rate is expected to make export cheaper and more competitive, leading to increase in output and income (IMF, 2017). But exchange rate proved to have significantly impacted output per capita negatively (with a probability value of 0.03) in Nigeria's context. Suggesting that exchange rate policies in Nigeria have so far not been growth inducing. Expectedly too, contemporaneous output was found to have been significantly impacted by lagged GDP per capita. The output equation also shows that growth rate of money supply significantly drove output (with a probability value of 0.01). Focusing on the exchange rate equation, the result indicates that inflation rate, real interest rate (INT) and broad money supply were the major significant drivers of exchange rate. Looking at the inflation rate equation, the result indicates that growth rate of money supply led to higher level of inflation in line with the monetarist proposition. The inflation equation also show that expectation of inflationary spree (captured by past inflation rate) led to rise in contemporaneous inflation.

Next, we discuss the GMM result over the fixed exchange rate policy regime (1970-1985). Apendix 4 report the result of the system GMM estimation for the fixed exchange rate policy era. As the output equation indicates, broad money supply, real exchange rate and past value of real per capita GDP met the expected sign but none of them significantly impacted Nigeria's economic growth performance.

A similar result emerges from the real exchange rate and inflation rate equations. Virtually all the variables met the a priori expectation in that they are correctly signed in line with economic theory. However, these hypothesized determinants did not significantly impact exchange rate and inflation rate. The result, thus, suggests that fixed exchange rate policy may have attenuated the effect of these hypothesized determinants (on output, inflation and exchange rate) thereby leading to their insignificant effects out output.

We next consider the effect of flexible exchange rate policy (1986-2016) – over which 'guided deregulation policy' was rife in Nigeria – on real per capital output and other macroeconomic fundamentals. In Apendix5, we present the result of the system GMMestimation of per capital GDP, inflation and real exchange rate on their hypothesized determinants. An insightful result emerges.

Focusing on output equation in Apendix 5, contemporaneous per capita GDP is found to be significantly explained by lagged GDP per capita, lagged real exchange rate and contemporaneous inflation rate. The output equation also indicates that contemporaneous exchange rate dose not significantly impact current output. In other words, real exchange rate explains contemporaneous GDP per capita only with a lag. This result tend to support our earlier finding from the granger causality estimates, namely; that real exchange rate impact output via a transmission channel. Looking at the real exchange rate equation, the result shows that past exchange rate, contemporaneous inflation and real interest rate are the significant drivers of real exchange rate in Nigeria. The inflation equation indicates that output, real exchange rate, broad money supply and expected inflation rate significantly explain contemporaneous inflation rate

over the period of deregulated exchange rate regime in Nigeria.

The effect of broad money supply on inflation rate over this period in insightful. Notably, over the entire sample period (1970-2015), it is growth rate of broad money supply (M2G) that significantly explains output whereas over the period of flexible regime (1986-2015), the result shows that the level value of money supply (m2) significantly drives per capita output growth in Nigeria. In this regard, the result from the inflation equation supports the monetarist proposition.

5. Conclusion and Recommendation

Summary of Findings

Overall, the results from the GMM proved that flexible exchange rate policy impacted negatively and significantly too, on Nigeria's economic growth performance. The effect of exchange rate on output over the fixed regime proved to be abysmal in that the effect of the hypothesized determinants of output and inflation on output and inflation (over the sample period) were insignificant. Looking at the entire sample period too, exchange rate significantly impacted output negatively. The implication is that increase in naira exchange rate has led to significant decline in output rather than increase in the latter. Nigeria's growth performance, instead, seems to have been influenced directly by monetary variables (broad money supply and its growth rate) rather than exchange rate policies. This seems to have sustained a pattern of exchange rate that is unfavorable to growth; hence the need for a broader program of economic reform to overhaul the Nigeria's exchange policy. This result aligns with the finding by Johnson and Eme (2012) for Nigeria.

Conclusion

This paper investigates the relationship between exchange rate regimes and economic growth in Nigeria by relying on the generalized moment of moment (GMM) simultaneous equations model and granger causality test. We investigated the impact of exchange rate regimes on economic growth in the regulated, deregulated and the overall period (1970-2015). It was found that during the period of exchange rate regulation, 1970 -1985, exchange rate was positive but insignificant in driving GDP growth rate in Nigeria. On the other hand, it had a negative and significant impact during the deregulated regime as well as the overall period under study.

The study reveals that exchange rate did not granger cause Gross Domestic product in the period under study. This means that the lagged values of exchange rate with the lagged value of GDP included did not provide statistically significant information about the future values of GDP.

From the study also we observed that Exchange rate had a negative and significant impact on Economic growth in Nigeria during the deregulated regime and also in the overall period under study (1970-2015). However, it had a positive but insignificant impact on economic growth in the regulated regime 1970-1985. We also found out that growth was affected by broad money supply instead of exchange rate policies in the period under study

Recommendations

A pre - requisite for complete deregulation is the development of competitiveness and a strong export base. Nigeria, being a mono - economy and highly dependent on crude oil export lack both the competitiveness and strong export base to benefit from complete exchange rate deregulation.

It is therefore recommended that the exchange rate policy in Nigeria be reviewed. We strongly recommend the implementation of the Guided deregulation Policy in which the Government will step in to intervene in order to prevent excessive fluctuations. This entails that the exchange rate, though market driven should be pegged within a given band in order to prevent excessive fluctuation. This recommendation aligns with that of Ekpo (2015) on the need for more conscientious implementation of the guided deregulation policy.

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Apendix 1

Pairwise Granger Causality Result (1970 – 2015) at Lag 1

Pairwise Granger Causality Tests			
REX does not Granger Cause GDPC	45	3.28688	0.0770
GDPC does not Granger Cause REX		0.21024	0.6489
CPI does not Granger Cause GDPC	45	5.79870	0.0205
GDPC does not Granger Cause CPI		3.22451	0.0797
FDI does not Granger Cause GDPC	45	6.51964	0.0144
GDPC does not Granger Cause FDI		0.00772	0.9304
REX does not Granger Cause INF	45	0.86089	0.3588
INF does not Granger Cause REX		0.00764	0.9308
M2G does not Granger Cause INF	45	10.0549	0.0028
INF does not Granger Cause M2G		0.51406	0.4774
REX does not Granger Cause M2	45	1.79933	0.1870
M2 does not Granger Cause REX		0.09136	0.7639
M2G does not Granger Cause M2	45	4.95528	0.0314
M2 does not Granger Cause M2G		2.21495	0.1442

Pairwise Granger Causality Tests			
M2G does not Granger Cause REX	45	0.25439	0.6166
REX does not Granger Cause M2G		0.18036	0.6732
CPI does not Granger Cause REX	45	0.29028	0.5929
REX does not Granger Cause CPI		5.41979	0.0248
FDI does not Granger Cause REX	45	0.19298	0.6627
REX does not Granger Cause FDI		0.75390	0.3902
INT does not Granger Cause REX	45	0.85993	0.3591
REX does not Granger Cause INT		2.76468	0.1038
INT does not Granger Cause CPI	45	9.85136	0.0031
INT does not Granger Cause FDI	45	0.99049	0.3253
FDI does not Granger Cause INT		1.1E-05	0.9974

Apendix 2

Pairwise Granger Causality Result (1970 – 2015) at Lag 2

Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
FDI does not Granger Cause CPI	44	1.28222	0.2889
CPI does not Granger Cause FDI		0.41083	0.6659
GDPC does not Granger Cause CPI	44	1.66937	0.2015
CPI does not Granger Cause GDPC		3.38840	0.0440
INF does not Granger Cause CPI	44	1.33692	0.2744
CPI does not Granger Cause INF		1.18433	0.3167
INT does not Granger Cause CPI	44	5.67965	0.0068
CPI does not Granger Cause INT		0.42028	0.6598
M2 does not Granger Cause CPI	44	0.43639	0.6495
CPI does not Granger Cause M2		7.09847	0.0023
M2G does not Granger Cause CPI	44	2.17480	0.1272
CPI does not Granger Cause M2G		1.05164	0.3591
REX does not Granger Cause CPI	44	2.09134	0.1372
CPI does not Granger Cause REX		0.89498	0.4168
GDPC does not Granger Cause FDI	44	2.43430	0.1009
FDI does not Granger Cause GDPC		3.80222	0.0310
INF does not Granger Cause FDI	44	0.82358	0.4463
FDI does not Granger Cause INF		0.63591	0.5349
INT does not Granger Cause FDI	44	0.49689	0.6122
FDI does not Granger Cause INT		0.25791	0.7740

Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
M2 does not Granger Cause FDI	44	5.31439	0.0091
FDI does not Granger Cause M2		6.22374	0.0045
M2G does not Granger Cause FDI	44	1.84789	0.1711
FDI does not Granger Cause M2G		0.75075	0.4787
REX does not Granger Cause FDI	44	0.70012	0.5027
FDI does not Granger Cause REX		0.68487	0.5101
INF does not Granger Cause GDPC	44	0.35761	0.7016
GDPC does not Granger Cause INF		1.36852	0.2664
INT does not Granger Cause GDPC	44	2.00762	0.1480
GDPC does not Granger Cause INT		1.37823	0.2640
M2 does not Granger cause GDP	44	2.21341	0.1229

Apendix 3

GMM Result, Fixed and Flexible Exchange Rate (combined) Regime (1970-2015)

OUTPUT EQUATION:

$GDPC = -11127 + 1.05GDPC_{(T-1)} + 167.4INF - 26.1REX + 275.9M2G - 214.6M2G_{(T-1)}$

(0.0) (0.25) (0.03)* (0.01)* (0.12)

$R^2 = 0.93$ D.W = 1.57

INSTRUMENTS: $GDPC_{(T-1)}$ $INF_{(T-1)}$ $REX_{(T-1)}$ $M2_{(T-1)}$ INT $INT_{(T-1)}$ FDI $FDI_{(T-1)}$ M2G $M2G_{(T-1)}$

EXCHANGE RATE EQUATION

$REX = 3.17 - 0.0000036GDPC + 0.0059INF + 0.05LOG(M2) + 0.005REX_{(T-1)} - 0.03INT$

(0.65) (0.001)* (0.017)* (0.00)* (0.01)*

$R^2 = 0.94$ D.W = 1.5

INSTRUMENTS: $LOG(GDPC)_{(T-1)}$ $INF_{(T-1)}$ $REX_{(T-1)}$ $LOG(M2)_{(T-1)}$ INT $INT_{(T-1)}$ FDI $FDI_{(T-1)}$ M2G $M2G_{(T-1)}$

INFLATION RATE EQUATION

$INF = 7.6 - 0.000019GDPC + 0.49INF_{(T-1)} - 0.014REX + 0.05M2G + 0.29M2G_{(T-1)}$

(0.47)(0.00)* (0.13) (0.52) (0.0007)*

$R^2 = 0.5$ D.W = 1.6

INSTRUMENTS: $GDPC_{(T-1)}$ $INF_{(T-1)}$ $REX_{(T-1)}$ $M2_{(T-1)}$ INT $INT_{(T-1)}$ FDI $FDI_{(T-1)}$ M2G $M2G_{(T-1)}$

Where: $_{T-1}$ stands for one lag period; Figures in parenthesis stands for the probability values; the variables are as earlier defined in section 4.

Apendix 4

GMM Result, Fixed Exchange Rate Regime (1970-1985)

OUTPUT EQUATION:

$GDPC = 89 + 0.06M2 + 0.04INF - 0.00037REX + 0.34LOG(GDPC)_{(T-1)} + 0.000046REX_{(T-1)}$

(0.51) (0.9) (0.24) (0.81) (0.96)

$R^2 = 0.62$ D.W = 2.2
INSTRUMENTS: LOG(GDPC(-1)) INF(-1) REX(-1) LOG(M2(-1)) INT

EXCHANGE RATE EQUATION

$$REX = 5710 - 0.02GDPC + 4.9INF - 0.000000058M2 - 0.56REX_{(T-1)}$$

(0.56) (0.6) (0.58) (0.84)

$R^2 = 0.61$ D.W = 2.3
INSTRUMENTS: LOG(GDPC(-1)) INF(-1) REX LOG(M2)

INFLATION RATE EQUATION

$$INF = -11624 + 0.000000057M2 + 0.02GDPC + 14.1INF_{(T-1)} + 859LOGREX$$

(0.94) (0.9) (0.92) (0.52)

$R^2 = 0.49$ D.W = 1.59
INSTRUMENTS: : INF INF(-1) GDPC(-1) INT

Where: $_{T-1}$ stands for one lag period; Figure in parenthesis stands for the probability values; the variables are as defined in section 4

Apendix 5

GMM Result, Flexible Exchange Rate Regime (1986-2015)

OUTPUT EQUATION:

GDPC = 41881 + 0.92GDPC$_{(T-1)}$ + 131.9REX –205.51REX$_{(T-1)}$ –474.1INF +0.00M2
(0.00)*(0.12) (0.0016)* (0.02)* (0.49)

R^2 = 0.97 D.W = 2.07
INSTRUMENTS: GDPC(-1) INF(-1) REX(-1) M2(-1) INT INT(-1) FDI FDI(-1) M2G M2G(-1)

EXCHANGE RATE EQUATION

REX = 30.1– 0.000068GDPC + 1.2INF + 0.00M2 +0.5REX$_{(T-1)}$ – 1.6INT
(0.67)(0.00001)* (0.46)(0.02)* (0.16)

R^2 = 0.29 D.W = 1.5
INSTRUMENTS: GDPC(-1) INF(-1) REX(-1) M2(-1) INT INT(-1) FDI FDI(-1) M2G M2G(-1)

INFLATION RATE EQUATION

INF = 65– 0.0002GDPC + 0.66INF$_{(T-1)}$ –0.19REX + 0.00M2 + 0.05M2G
(0.02)*(0.00)* (0.00)* (0.05)* (0.7)

R^2 = 0.5 D.W = 1.6
INSTRUMENTS: : GDPC(-1) INF(-1) REX(-1) M2(-1) INT INT(-1) FDI FDI(-1) M2G M2G(-1)

Where: $_{T-1}$ stands for one lag period; Figure in parenthesis stands for the probability values; the variables are as earlier defined in section 4

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The Analysis of the Relationship between Telecommunication, Foreign Direct Investment and Economic Growth in Nigeria: 1980 - 2017

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Abstract

The study examines the nexus between Telecommunications, Foreign Direct Investment and its impact on economic growth in Nigeria from 1980 – 2016 using augmented Cobb Douglas production function specification. Secondary data were sourced from the World Bank, international telecommunication union, and central bank of Nigeria. The variables that were tested are gross domestic product per capita, manufacturing output, the ratio of government to private sector expenditure in the telecommunication sector, foreign direct investment, consumer price index and employment. The result indicates that teledensity is statistically significant at 5%; foreign direct investment is statistically significant at 10%; and consumer price index is statistically significant at 10% which exhibit a negative influence on economic growth. In conclusion, there is the need for more emphasis on improving local content in terms of electronics design, fabrication, mass production of mobile phones, telecom equipment to enhance human capacity development. This is to further deepen the impact of telecommunication and over time reverse the negative influence. Since the sector is heavily private sector driven under public sector regulation, the study suggests that better trade policy reforms should be implemented skewed towards aggressive local content drive.

Keywords: Information Communication, trade, and growth
JEL Codes: L96

1. Introduction

Telecommunication is a potent global force in stimulating economic growth (Eke & Aluko 2006). It plays a huge part in boosting global Gross Domestic Product (GDP), capacity development, business profitability and efficiency, and employment generation (Jha & Kaleja, 2008; Kozma, 2015). These authors argue that telecommunication can also be termed as Information Communication Technology, ICT and will be used interchangeably in the study. Telecommunication or ICT influences and enhances transparency and responsiveness of governmental agencies, businesses, households and individuals alike. It also makes broadly available and equally easily accessible, a whole lot of opportunities for people with various capacities and differing social backgrounds. The diffusion of ICT or deepening of teledensity or the spread or the wide acceptability of telecommunication is linked to foreign direct investment, especially in Nigeria.

Foreign Direct Investment (FDI) involves the transfer of financial resources, capital, and expertise (World Bank, 1996). Odozi (1995); Hsieh, Rai and Keil (2008) and Pradhan (2012) contend that foreign direct investment can also be an investment made to acquire a lasting management interest in a business enterprise operating in a country. They emphasize that the investor is technically a foreigner in the host country.

With the liberalization of the telecommunication sector that climpaxed in 2001 with the eventual roll out of private sector led service providers in the country, FDI played a very important role in driving the explosive expansion of the sector. Magaji and Eke (2013) observed that foreign capital played a pivotal role in developing the telecommunication sector. Rosa (2014) argued that economic growth is

the increase in the gross domestic product of an economy. The author posited that telecommunications is driving economic growth in the 21st century. Prior to Rosa (2014), Odozi (1995); Hsieh, Rai and Keil (2008) and Pradhan (2012) in an effort to assess the impact of telecommunication, argued that there is a direct link between telecommunication and economic growth. For instance, Pradhan (2012) in assessing the impact of telecommunication infrastructure on economic growth for G-20 developing and developed countries, suggested that telecommunication is the driving force of economic growth. In Nigeria, Magaji and Eke (2013) posited that the growth in the services sector is directly linked to the liberalization of the telecommunication services sector. The government's broad objective of limiting itself to regulation gave the sector its huge boost. Is Nigeria's economy positively impacted by telecommunication?

Therefore, the question is has telecommunication contributed to the economic growth of Nigeria. This is the motivation of the study and its significance is highlight to regulatory authorities possible policy areas to further develop the telecommunication sector positioning it a local content initiative driver. The overall objective of the study is to investigate the relationship between telecommunication and Nigeria's economy.

2. Literature Review

Conceptual Issues

Telecommunication/Information communication technologies (ICT) was defined as the combination of, "information and communication" to emphasize the merging of both technologies (Ong, 1998). Haddon (1988a) observed that ICT refers to a range of technologies for gathering, storing, retrieving, processing, analyzing, and transmitting information. Issakson (2010) posited that ICT includes but is not limited to technologies such as the Internet, mobile telephony, satellite communications and digital television over cable or aerials. More so, the use of the term "information communication technologies" (ICT) is preferred over the term "Information Technology" (IT) or "Information Systems" (IS) in the context of this study. How information is communicated is just as important as how information is collected, stored and shared (Yildiz, 2007). Therefore, for the purpose of this study, the term "ICT" is used as an umbrella term which includes any communication device or application encompassing: Internet, cellular phones, computers, network hardware and software and satellite systems, e-learning, e-government and online databases.

Magaji and Eke (2013) defined telecommunication simply as communication over a distance by designated devices at a very fast speed. Rosa (2014) added that it is achieved by broadcasting. Perri (2013) and Rosa (2014) argued that foreign direct investment is a financial commitment made by a company or individual in another host country. They posited that it is a business interest in another country, which could be in the form of either establishing business operations or acquiring business assets in a foreign country. They defined economic growth as the increase in the production of goods and services per capita over a period of time.

Theoretical Framework:

Solow (1957) pioneered the work on the economics of growth which opened the vista for various theoretical approaches and applications. This can be simplified as

$$Y = f(K,L) \quad 2.1$$

$$Y = \alpha + \beta(K,L) \quad 2.2$$

Where,

Y, K, L, and β are output, capital, labour and efficiency of production.

Mankiw, Romer and Weil (1992) also modified Solow's model and recommended it for inclusion of human capital accumulation. Using the Cobb Douglas form and taking the logarithm, we have

$$d_y = d_A + \alpha d_K + \beta d_L + \lambda d_U \quad 2.3$$

where d_y is the rate of growth of K, L, and Y, and β, α, λ are respectively the elasticities of output with respect to physical capital, labour and ancillary variables. The final form of equation 3 will be

$$dy_{it} = dA + \alpha dK_{it} + \beta dL_{it} + \lambda dU_{it} + \sum_{it} \quad 2.4$$

where $\sum_{it}$ is an error term. It is the basis for the empirical model estimation in section four.

The relationship between telecommunication and economic growth has attracted the attention of researchers especially since 1980s. Many studies confirmed a clear and positive correlation between telecommunications and economic growth {e.g. Hardy (1980), Saunders, Warford, and Wellenius, (1994), Lichtenberg (1995), Greenstein and Spillar

(1996) and Norton (1992)}. Roller and Waverman (1996) investigated the impact of telecommunication infrastructure for 21 OECD countries over a period of 20 years and found a significant positive link between the two. Dutta (2001) applied Granger causality tests for a cross section of 30 developing and industrialized countries in three different years, and found a bi-directional causality for both developing and industrialized countries.

Asgarkhani (2005); Asgarkhani (2009) and Perri (2013), studied the impact of telecommunication/ICT, innovation & information diffusion, and socio-economic impacts in London, United Kingdom and Delhi, India respectively. While Asgarkhani (2005) and (2009) was particularly interested in e-procurements, and e-governance in local governments, he deployed a mix of primary and secondary data which he regressed using the OLS method. Perri (2013) on the other hand, investigated macroeconomic impact of enterprise modeling. He used the cross sectional data. They both arrived at the conclusion that telecom/ICT expanded productivity and output at firm and government levels. According to Westcott (2001) who studied the e-government and economic growth in the Asia-Pacific Region, using Asian Development Bank as a case in point, adopted and regressed time series data. He observed that telecommunication/ICT firms are hugely a private sector concern; as a result, the role of telecom/ICT on economic growth portends that ICT investment decisions are primarily determined by level of confidence, expected demand and entrepreneurial drive. This approach implies that investment in ICT depends on prospects for profit and input constraints (Jorgenson 2007, McCoy & Mbarika 2005). Indeed Jorgenson (2007) relying on the assemblage of secondary sources of data spanning over twenty years, from the World Bank, International Monetary Fund, and International Telecommunication Union, studied Information Technology and the world economic growth, likens the ICT to the engine of 21st century digital macroeconomics.

The Asgarkhani-Perri (AP) arguments cited in Rosa (2014) have dominated arguments bordering on ICT investment and the economy in general. Rosa inquired about the impact of telecom/ICT on the Finnish society. The author's work was modeled and regressed based on time series data and specified linear relationships between telecommunications and the Finnish economy. Rosa (2014)'s report emphasized that the A-P view posits that fully efficient telecom/ICT sector and several sub-sectoral competing firms, with minimal cost, coupled with symmetric information among all investors, would lead to modernization of the society and its eventual development.

Oluwafemi et al (2006) tracked the impact of telecom/ICT on small and medium scale enterprise productivity in Nigeria. Their work was modeled and regressed based on cross section data. In their findings, they argued that telecom/ICT investment is affected by financial capital and the availability of other inputs which could constrain its investment plans and growth. From a macroeconomic prospective, the sensitivity of telecom/ICT investment to profits is dependent on business cycle and macroeconomic instability. Other arguments, (Oluwafemi et al, 2006; Sife, 2015) involving access to information, adverse policy measures, moral hazard, agency, network related costs and innovations effects point to importance of financial capital constraints on ICT investment decisions and the links between their structures and decisions. Access to information may make or mar any investment decisions under such conditions, these firms may face disequilibrating scenario that can threaten their profitability. Sife (2015) studied the developmental impact of the use ICT mobile phones in Bangladesh's rural areas. In the work, the author highlighted the arguments of the essence of financial capital constraints to the growth of telecom/ICT sector. Sife regressed the time series data that spanned thirty years. He discovered that financial capital was the greatest constraint on the sector's ability to deliver macroeconomic growth in Bangladeshi economy.

3. Methodology

Model Specification

The starting point of the empirical estimates of this study is the augmented Cobb-Douglas production framework, a modified form of equation (2.3), teledensity (TLD) and foreign direct investment (FDI) incorporated into the model:

$$dy_{it} = dA + \alpha dK_{it} + \beta dL_{it} + \lambda dU_{it} + \sum_{it} \qquad 3.1$$

This model was adapted from Gordon-Loeb (2002) and Ayanwale's (2007) work. Based on the equation 3.1, Mahmoodi and Mahmoodi (2016), Osano and Koine (2016), and Latif, Mengke, Ximei, and Jianqiu (2017) argued that economic

growth, E_{growth}, is a function of telecommunication and foreign direct investment.

That is

E_{growth} = f(Telecom, FDI)

GDP = *f* (GDP_{capt}, Manufacturing, G_{sector}/P_{sector} Expenditures, CPI, FDI, employment, Net Import/Export, Teledensity) 3.2

$$GDP = \alpha + \beta_1 GDP_{capt,} + \beta_2 MNF + \beta_3 GEXP + \beta_4 CPI + \beta_5 FDI + \beta_6 EMPT + \beta_7 EXPT + \beta_8 TLD + e_t \quad 3.3$$

Where:
GDP_{capt} = GDP per capita
MNF = Manufacturing Output
GEXP=Government/Private sector expenditure in ICT
FDI = Foreign Direct Investment in ICT
CPI = Consumer Price Index
EMPT = Employment
EXPT = Net Import Export
TLD = Teledensity

GDP = *f* (Teledensity, Foreign Direct Investment) 3.4

Meanwhile, teledensity is proved to have a significant correlation with the per capita GDP, (Bethuel and Werner, 2004)

Teledensity = *f* (GDP_{capt}) 3.5

In the study of the impact of telecom/ICT on China's manufacturing sector, Singh (2012) observed that China's teledensity shows a strong effect on the manufacturing sector. It can therefore be deduced thus:

Teledensity = *f* (Manufacturing Output) 3.6

The works of Dunn (2008) in India, and Magaji & Eke (2014) in Nigeria affirmed that public and private sector expenditure on telecommunication/ICT has positive and significant contribution to teledensity. As such:

Teledensity =*f* (G_{sector}/P_{sector} Expenditures) 3.7

Furthermore, the work of Crawford (2015) on the Bulgarian economy also revealed that Consumer Price Index affects teledensity positively.

Hence,

Teledensity = *f* (CPI) 3.8

Baraka (2013)'s stance is that in less developed countries (such as Nigeria) where the private sector drives its development guided by government, foreign direct investment has been found to have a significant and profound impact on teledensity.

Teledensity = *f* (FDI) 3.9

Meanwhile, Chindo (2013) asserted that teledensity has positive impact on employment generation and the sector has recorded huge success from creating jobs.

Teledensity = *f* (employment) 3.8

Baraka (2013) explored a GIS-based approach to assessing teledensity indicators and claimed that the relationship between export and teledensity is not a strict complementarity. In his debate, citing countries such as China and the US, their data shows that surge in teledensity drives their export indices. While that is not the case for consuming nations such as sub Saharan African countries, among whom Nigeria is touted as the fastest growing telecom market in the world, (ITU, 2012). He contended that the later countries virtually import telecom/ICT infrastructure, consumer hardware and software. Thereby depleting their foreign reserves.

4. Analysis of the Results

The results indicate that telecommunication is influencing the economy negatively. The equation explains over 76% of the phenomenon (R^{-2} = 0.764096).

Table 4 Regression using RGDP as dependent variable: 1980 – 2017

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.98398	0.172806	75.71467	0.0000
D(LTLD)	2.766841	0.412932	1.491386	0.1484
D(LMNF)	0.000451	0.696488	1.196464	0.2427
D(LGEXP)	-0.78691	0.326074	-1.157974	0.2578
D(LSRVS)	-1.570640	0.445240	-0.962964	0.3448
D(LEXPT)	0.473546	0.251398	0.004567	0.3247
D(LCPI)	-1.977898	0.399519	-2.361725	0.0263

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LFDI)	-0.274432	0.485524	-2.344017	0.0273
D(LEMPT)	3.523234	2.484353	3.016780	0.0058
R-squared	0.923911	Mean dependent var		12.80444
Adjusted R-squared	0.810821	S.D. dependent var		0.522313
S.E. of regression	0.382362	Akaike info criterion		1.137031
Sum squared resid	3.655023	Schwarz criterion		1.541067
Log likelihood	-10.32952	Hannan-Quinn criter.		1.274819
F-statistic	4.572246	Durbin-Watson stat		1.414660
Prob(F-statistic)	0.001580			

Source: Author's Regression Estimates, 2018

The second regression explains over 68% (R^{-2} = 0.668) while the last equation for 2001 – 2014 explains over 66% of phenomenon. The results show that the adjusted R^2 is 0.81, which shows that the model explains about 81 per cent of the variation in LRGDP. Public and private expenditure has a negative and significant relation with economic growth. This is not expected and is not consistent with some previous results such as those of Shiu & Lam (2007) and Jha & Kaleja (2008) who reported a positive relationship. However, if teledensity was removed, the sign changes to positive. It is safe to report among other things that TLD reverts the gains of the expansionary effect on Nigeria's GDP as theorized by Keynes (1939). This observation should be a source of major concern to policy makers as this highlights the negative impact of capital flight occasioned by telecommunication giants. The services sector is touted as the most beneficiary of the technology and business model as it has enabled mobile banking, e-channels, e-government, e-payment, higher connectivity, e-commerce, etc. It is shocking to observe that regression results depict that services sector shows a negative and significant relation. This definitely indicates that the 'macro-telecommunication' policy in place does not encourage the service sector to contribute positively to growth. We had expected otherwise.

The negative and significant relationship between consumer price index and growth when teledensity is inserted, suggests that the macroeconomic policy in place does not encourage growth. We had expected that ability of telecommunication innovation to moderate seamless transaction and promote cashless business environment thereby exhibit positive sign.

Foreign direct investment has a negative and non-significant relationship. The non-significance of FDI variable indicates the need for constructive attention to be given to reversing capital flight to enhance economic growth.

5. Conclusion and Recommendations

The study investigates the empirical relationship between telecommunication, foreign direct investment and economic growth for the period 1980 – 2016: telecommunication negates the nation's economic growth. Also, the negative relationship of the nation's services sector suggest that the much touted benefit that is obvious drains the economy.

Through the services sector, net import export is scoring negative as the economy is fast becoming a dumping ground. Secondly, public/private sector consumption is not large enough to induce economic growth in this respect.

The government should consider introducing series of regulatory framework that would reverse the adverse effect that teledensity, services, net import export and foreign direct investment has on economic growth such as mandating that these firms be quoted on the stock exchange, assembly plants for at least 60% of the inputs for the hard ware must be located in Nigeria and 30 percent of the raw materials sourced locally.

Another way to improve the situation is through reinvigorating the process of providing necessary infrastructure which lowers the cost of doing business. Examples are fixing the power and energy crisis, modernizing our road network. Closely related is curbing corruption. The study spans from 1980 – 2017, so as to take into cognizance the pre liberalization and post liberalization of the telecommunication sector.

Finally, there's the need for integrating a macro framework aimed at combating telecommunication induced poverty in Nigeria.

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Accounting Conservatism and Firm Growth of Listed Industrial Firms in Nigeria: 2006 -2015

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Abstract

This study examines the impact of accounting conservatism on the firms growth of listed Industrial firms in Nigeria for a period of 2006-2015.One of the effective factors of growth and development is efficient investment and one of the effective factors of efficient investment is conservatism. The study used documentary data collection from the annual reports and accounts of the sampled companies for the period under review. Descriptive statistics was first used to analyze the data to provide summary statistics for the variables and subsequently correlation analysis was also carried out using spearman rank correlation technique for the dependent and explanatory variables. Multiple regression technique with OLS framework was employed to analyze the data using STATA software 13.00 version. The result of the study shows that there is a positive relationship between accounting conservatism and firm growth. Growth options positively affect investment. However this effect is valid only for firms with high growth opportunities. Leverage affects the relationship between debt maturity and investment. Although, a positive relationship between conservatism and growth financed with long-term debt was obtained, an expectation regarding the association between conservatism and growth through short-term financing is less clear. The findings are robust to various alternative proxies. The study makes some important contributions to the existing literature and has broad implications for standard setters and financial statement users.

Keywords: Conservatism; Firm Growth, Leverage
JEL Codes: M41

1. Introduction

The dynamics of firm growth is an interesting and important area of study for two reasons: 1) the growth of firms is a main ingredient in economic growth and job creation, and 2) the actual dynamics has an impact on the consequences of industrial concentration. The extent and speed at which smaller firms enter the market and grow successfully is an important check on the development of monopoly power by the large firms in the economy. The role of innovation in this process was stressed by Schumpeter and the Schumpeterian hypothesis remains to this day a controversial interpretation of the growth process in modern industrial economies.

The Accounting conservatism considers as one constraint related to level three (recognition and measurements) of the conceptual framework underlying financial accounting issued by Financial Accounting Standard Board (FASB). The conservatism is from the most important accounting concepts effect accounting disclosure and measurement. The effects resulting from the application of accounting concept (administration practices) while the accounting measurement reflects the values of the financial reports which includes the revenue and assets measurements less than its value (understatement), whereas the values related with the expenses and obligations measurement more than its value (overstatement).

The accounting conservatism application meets a special interest from the external auditors which is the recognition of the expected losses without the expected profits which means recognizing the expenses and delaying the revenue and the earnings.

Basu (1997) defined conservatism as the accountant's tendency to require a higher degree of verification for recognizing good news in earnings than for bad news. Since annual unexpected returns capture news arrival during the year, this definition

has implications for the earnings-return relation. In a regression of annual earnings on returns, Basu (1997) predicted and found that earnings respond more to negative returns (bad news) than positive returns (good news). He calls this differential response the asymmetric timeliness of earnings and uses it as a measure of conservatism. Prior studies have documented that accounting conservatism facilitates access to external capital lowers costs of capital and improves investment efficiency (Ahmed, Billings, Morton and Stanford-Harris 2002). It was argued that given their asymmetric payoffs, it is likely that early loss recognition is particularly useful to debt holders. Accordingly, Ball (2008) found that the demand for conservatism originates in the debt markets. However, the utility of accounting conservatism as an early-warning mechanism might not be uniform across debts with different maturity. Specifically, the demand for alternative monitoring mechanisms (such as conservative accounting) might be lower for short-term debt that matures before an investment option is to be exercised and hence enables debt holders to renegotiate the contract on a more frequent basis (Myers,1977). The agency theory literature suggests that the separation of ownership and control in modern diffused ownership corporations generates economic conflicts (Jensen and Meckling 1976; Fama and Jensen 1983). Agency costs can also result from conflicts of interest between stockholders and debt holders. For example, the "asset substitution" problem arises when a firm exchanges its low-risk assets for high-risk investments, transferring value from the bondholders to the shareholders (Jensen and Meckling 1976). Another agency cost of debt, debt overhang, occurs when stockholders choose to forgo potentially profitable projects if too much of the benefits will accrue to existing debt holders (Myers 1977). To the extent that conservative accounting enables debt holders to better monitor managers by preventing them from transferring wealth to shareholders, the firm is likely to have better access to debt capital when accounting is more conservative (Ahmed, 2002).

Myers (1977) argued that one way of reducing agency conflicts is to shorten the maturity of outstanding debt. Short maturity can improve monitoring as it offers more frequent opportunities to renegotiate the debt. While renegotiations entail costs, it offers capital providers opportunities to ensure that the managers are not making suboptimal investment decisions. Therefore, debt maturity can be utilized to minimize the effect of private information on financing costs. Firms with greater information asymmetry will issue short-term debt to avoid locking in higher cost of financing with long-term debt because they expect to be able to borrow under more favorable terms later (Flannery 1986; Kale and Noe 1990; Diamond 1993).

2. Literature Review and Theoretical Framework

Empirical investigations into firm growth have been guided by a simple stochastic model devised by Gibrat (1931), observed the lognormal firm size distribution. Gibrat's model therefore `explains' growth events in terms of purely random shocks. This model has become the workhorse of empirical research into firm growth, because random growth is taken as a null hypothesis in attempts to discover factors that systematically affect firm growth rates. Although empirical work has made progress in understanding of the determinants of growth rates, Gibrat's model remains a useful benchmark of the growth process for a population of firms.

According to Myers (1977), longer debt maturity may lead to underinvestment. This is because maturity of debt is negatively associated with growth opportunities. Aivazian, Ge and Qiu (2005a) analyzed the effects of debt maturity on investment. They concluded that after controlling for leverage, a high percentage of long-term debt significantly reduces investment for firms with high growth opportunities. The authors also stated that debt maturity has no significant effect on investment for firms with low growth opportunities. In other word shortening debt maturity may be a solution to underinvestment. Since firms with high growth opportunities suffer from underinvestment more, growth opportunities are expected to be related to maturity of debt. Dang (2008) distinguished between ex ante and ex post effects of investment by high-growth firms, and concluded that high-growth firms control underinvestment incentives by reducing leverage but not by shortening debt maturity. In line with Myers (1977), Barclay and Smith (1995) confirmed that firms with few growth opportunities have more long term debt in their capital structure. Guedes and Opler (1996), Ozkan (2000), Barclay, Marx and Clifford (2001) also concluded that firms with high growth opportunities have shorter term debt. Demirgüç-Kunt and

Maksimovic (1999) extend this finding to 30 different countries including Turkey.

Firm size may also affect debt maturity. Large firms have more fixed assets which increases asset maturity which in turn may increase maturity of debt due to asset-liability matching principle. Besides, large firms operate in different sectors and regions which help them smooth their cash flows with respect to small firms. Hence, large firms may be assumed to be less risky than small firms. Being less risky may increase debt maturity. Barclay and Smith (1995) concluded that firms with higher market values have longer debt maturity. Özkan (2000), Barclay, Marx and Clifford (2001), Johnson (2003) used sales as a proxy for firms size and concluded that firms with higher sales use longer term debt. Antoniou, Güney and Paudyal (2006) used total assets and sales as proxies for firm size and concluded that although firm size is positively related to debt maturity in UK, it is insignificant in Germany and France. Dang (2008) used total assets as a proxy for firm size and concluded that size positively affects debt maturity. Fan, Titman and Twite (2008) also used total assets as a proxy for firm's size and extend the results to 39 different countries including Turkey. They conclude that firm size positively affects debt maturity. Demirguç-Kunt and Maksimovic (1999) examined debt maturity of firms in 30 countries some of which are developing ones including Turkey. They concluded that larger firms (proxied by total assets) tend to have more long term debt in their capital structure. They also analyzed the effects of sales on debt maturity and state that firms with high sales over total assets have high portion of short term debt in their capital structure which may be due to working capital needs. Hence, choosing different proxies for firm size may lead to conflicting results. Guedes and Opler (1996) concluded that small firms issue longer term debt to mitigate the liquidity risk they face. Flannery (1986) argued that, due to signaling costs, high quality firms issue short term debt whereas low quality firms issue long term debt. Diamond (1991) concluded that firms with good news prefer short term debt since refinancing (liquidity) risk is low for these firms. On the other hand, firms with no good news prefer long term debt but have to rely on short term debt due to their low quality. These findings suggest that firm quality should also be used in the debt maturity equation. Barclay and Smith (1995) presented a significantly negative, yet trivial coefficient for firm quality. Stohs and Mauer (1996) concluded that firms with larger earnings surprises tend to use shorter term debt. Berger et al. (2005) test the implications of Flannery's (1986) and Diamond's (1991) models concerning the effects of risk and asymmetric information in determining debt maturity. They use bank loan data and found that their results are consistent for low risk firms. These firms have significantly shorter maturities. The authors concluded that debt maturity for high risk firms do not have significantly different debt maturities than intermediate-risk firms. This finding conflicts with that of Diamond (1991).

Modigliani and Miller (1958) argued that perfect capital markets allow for the separation of financing and investment decisions. However, the agency theory literature has established the existence of frictions in the relationship between investment and financing due to the presence of information asymmetry across market participants. Accounting conservatism can act as a mechanism that can help reduce the agency costs resulting from asymmetric information and conflicting interests. Early loss recognition is particularly useful to debt holders as it can trigger detect covenant violations in a timelier manner allowing lenders to veto major decisions that could further erode debt quality (Ball et al. 2008). Prior empirical literature indicates a strong association between conservatism and debt but it has not examined whether this relationship will vary based on the maturity structure of the debt. In theory, firms with greater information asymmetry will issue short-term debt to avoid locking in higher cost of financing with long-term debt because they expect to be able to borrow under more favorable terms later (e.g., Flannery 1986; Kale and Noe 1990; Diamond 1993). Barclay and Smith (1995) and Berger (2005) found evidence that firms with higher information asymmetry use more short-term debt, and Custodio (2013) found that the increase in the use of short-term debt in recent decades is driven primarily by firms with greater information asymmetry.

Generally, many of the potential effects of conservatism on agency costs could also be accomplished by shortening the maturity of the firm's debt. Given the potential costs associated with both conservative accounting and the use of short-term debt, it is possible that the two mechanisms operate as substitutes for addressing the various agency costs. In a world of perfect capital

markets where there are no bankruptcy costs, no agency problems, and no asymmetry of information exists, the financial policy of the firm would be irrelevant and the choice between internal capital, debt and equity will not impact investment (F. Modigliani and Marton Millar 1958). However, because of asymmetric information, conflict of interest between insiders, shareholders and lenders, internal financing does not represent a perfect substitute for external financing and therefore the financing choices made will matter to a company. Myers and Majluf (1984) proposed a realistic theory of financing (the pecking order theory of financing) in which, in a world with asymmetric information, issuing new equity is perceived by the market as a signal of overvaluation and will negatively impact stock prices, thus corporations should use first their internally generated financing, second debt, and only as a last resort equities. Corporations for these reasons are therefore reluctant to issue new equity and will forgo good investment opportunities if they also have scarce internal resources or are unable to raise debt financing. Lenders may restrict lending because of adverse selection and moral hazard problems. In another vein Myers and Majluf (1984) postulated that if equity holders and debt holders withhold capital from firms due to potential agency problems, firms may be unable to obtain the external capital necessary to fund all positive NPV projects, which makes them more likely to utilize internal resources to fund growth. When some default risk exists or is difficult to assess because of asymmetric information, lenders may require collateral or increase interest rates to include a risk premium or simply reject the loan application. Leland and Pyle (1997) developed a signaling model of financial structure in which entrepreneurs seek financing of projects whose true qualities are known only to themselves.

Theoretical Framework

Rajan and Zingales (1998) provided evidence that financial development reduces the costs of external financing and increases the growth of firms in financially constrained industries. There is also evidence that the extent of corporate disclosure facilitates externally financed growth (Khurana et al. 2006, 2008). If conservatism is an effective monitoring mechanism, it should allow firms to more easily attract the needed financing to fund potentially profitable projects, as it reduces investors' reluctance to supply firms with capital to fund profitable projects and allow firms to fund more positive NPV projects (the monitoring hypothesis). As a result, accounting conservatism might facilitate growth through external capital by alleviating the capital rationing problem as it ensures potential capital providers that existing 'bad news' is already incorporated in the stock price. However, this prediction is not entirely obvious as the association might not be observed if conservative accounting, which leads to an understatement of net assets and hence an overstatement of the leverage ratio (i.e., debt to assets), makes external capital less accessible.

3. Methodology

This study examines the Impact of Accounting Conservatism on Firm Growth on the listed industrial firms quoted in the Nigeria Stock Exchange for a period of 10 years from 2006 to 2015. Ex-post facto research design was used for this study. The population of the study consists of all Industrial goods Firms listed on the Nigerian Stock Exchange and they are twenty six (26) in numbers as at 31st December 2015. Thirteen (13) out of this population which is 50 percent of the total population were filtered down to represent the sample size. Thus, a two-point filter was used in arriving at this sample size namely: only firms that have been in operation from January 2006 to 31st December 2015 are considered as relevant for the study and it must have all the required data for the study. Therefore, the thirteen companies selected met these criteria.

Variables and Measurement

The study used three sets of variables Dependent, independent and control variables. Firm growth constitutes the dependent variable proxy by change in firm's sales while accounting conservatism is the independent variable. It is important to note that there is no generally accepted empirical proxy for conservatism, this study uses CON_KW measure for conservatism which is C-Score developed by Khan and Watts (2009). It is a firm-year measure that is based on the Basu (1997) model of asymmetric timeliness. The Khan and Watts model expresses each of the coefficients in the Basu model as a linear function of firm size, market-to-book ratio and Leverage. Therefore, CON_KW is modified as CONS in this study.

The control variables are: Ratio of Profit After Tax to Total Asset, Changes in Sales to Total Asset and Tobin's Q.

Table 3.1: Summary of variables and their Measurements

Dependent Variables	Definition
Firm Growth (GRTH)	This is defined as the changes in sales from one year to another that is, current year sales minus previous year sales divided by the previous year's sales
Independent Variables	
Firm Size(FS)	This is measured as log of total Asset
Market to Book Value (MKTBV)	This is measured as number of outstanding ordinary Share * Average Market Price Scale by total Assets at the year-end (Rezaei,Rezazadeh and Moradi,2005)
Leverage (LEV)	This is defined as long term and short term debt deflated by the Maket Value of Equity (Khan and Watts, 2009)
Control Variables	
Changes in Sales to Total Asset (CISTA)	This is measured as the ratio of changes in Sales to Total Asset
Profit After Tax to Total Asset (PATTA)	This is measured as the Ratio of Profit After Tax to Total Asset
Tobin's Q	This is measured as Market value of Equity plus Assets minus Book Value of Equity divided by the Total Asset

Source: Generated by the Researcher 2018

Models Specification

In other to examine the Impact of Accounting conservatism on the growth of a firm of listed Industrial Firm in Nigeria, a Multiple Regression Analysis has been designed. The dependent, Independent and control variables were used with their proxies clearly defined in table one above. The regression model was adopted from the work of Khurana et al. (2006) and the work of Khan and Watts (2009) with some modification.

$$CONS = \lambda_1 + \lambda 2Size_i + \lambda_3\ MKTBK_i + \lambda_4 Lev_i + \varepsilon_i \quad 3.1$$

$$GRWT_{it} = \beta O_{it} + \beta_1 FS_{it} + \beta_2 MKTBV_{it} + \beta_3\ LEV_{it} + \beta_4 CISTA_{it} + \beta_5 PATTA_{it} + \beta_6 Tobin'sQ_{it} + \varepsilon_i \quad 3.2$$

(All variables have been defined in Table 3.1 above)

4. Result and Discussion

This section presents the result of the work together with the discussion and analysis of the data which are descriptive statistics, correlation matrix and regression result summary.

Table 4.1 shows the mean of growth for the sampled industrial companies in Nigeria. The average growth is 0.23. This means that, the average growth of sample companies is N0.23k.

Table 4.1: Descriptive Statistics of the Variables

Variables	Obs	Min	Max	Mean	Std dev
GRTH	130	-.9950	112.1932	1.2319	1.1348
FS	130	8.4664	10.8288	9.3812	0.5249
MKTBV	130	-3.4942	13.3583	2.22304	2.7123
LEV	130	0.2359	24.1089	2.2465	3.3324
CISTA	130	-47.4985	39.6986	0.4364	6.2769
PATTA	130	0.0033	3.4373	0.2161	0.4597
TOBINS Q	130	0.6560	12.3421	1.4747	1.5047

Source: STATA 13.0 output based on the result in appendix attached.

This indicate an element of slow growth in the companies, with a minimum growth level of - 1.00K and maximum growth level of N112.19K. The standard deviation of 1.13 indicates that there is no significant variation in the growth of the sampled companies during the study period. The fs shows an average of 9.32%. This indicate an element of relative high fs in the companies, with a minimum fs of N8.47K and maximum fs of N10.82K. The standard deviation of 0.52 indicates that there is no significant variation in fs of sampled companies during the study period. mktbv shows a mean of 2.22 with a minimum of -3.49 and maximum 0f 13.36. The standard deviation of 2.71 indicates that there is no significant variation in mktbv of sampled companies during the study period. Leverage shows

an average of N2.25K with a minimum of 0.24K and a maximum of N24.11K. The standard deviation of 3.33 indicates that there is no significant variation in leverage of the sampled companies during the study period. Average cista is 0.44 with minimum of -47.50 and maximum of 39.70. The standard deviation of 6.28 indicate there is no significant variation in cista of the sampled companies in Nigeria. Average patta is 0.22 with minimum of N0 and maximum of N3.44. The standard deviation of 0.46 indicate there is no significant variation in patta of the sampled companies in Nigeria. Average tobin's q is 1.47 with minimum of N0.66 and maximum of N12.34. The standard deviation of 1.50 indicate there is no significant variation in tobin's q of the sampled companies in Nigeria.

Table 4.2: Spearman Rank Correlation Matrix of the dependent and Explanatory variables

Variables	GRTH	FS	MKTBV	LEV	CISTA	PATTA	Tobins Q	VIF
GRTH	1.00							
FS	-0.16	1.00						1.06
MKTBV	-0.09	0.17	1.00					1.07
LEV	-0.18	-0.11	-0.09	1.00				1.06
CISTA	0.68	-0.06	-0.29	-0.12	1.00			1.02
PATTA	0.13	-0.36	0.39	-0.08	0.00	1.00		1.09
Tobins Q	0.04	0.23	0.75	-0.54	-0.09	0.35	1.00	1.16
MEAN VIF								1.08

Source: STATA 13.0 output based on the result in appendix attached.

Table 4.2 shows the results of the spearman rank correlation between the dependent variable (growth) and explanatory variables (fs, mkbv, lev, cista, patta and tobin's q). fs, mkbv, and lev have -0.17, -0.09 and -0.18 respectively. This indicates a weak and negative relationship with growth. However, patta and tobin's q have positive but weak relationship with growth at the value of 0.14 and 0.05 respectively. However, the relationship between cista and growth is strong and positive. While lev, cista, and patta have negative relationship with fs. Mktbv and tobin's q have a positive relationship with the fs. The relationship between cista, patta and tobin's q and lev are weak and negative with value -013, -0.09 respectively. tobin's q has positive and strong relationship with lev with the value of 0.55. The relationship between patta and cista shows a negative but weak relationship with value -0.201. The relationship between tobin's q and cista shows a positive but weak relationship with value 0.09. The VIF indicates no present of Multicollinearity in the data used for the study.

Table 4.3 : Pooled OLS Regression Result

Variable	OLS Result			Robust Regression Result		
	Coefficient	T	p>|t|	Coefficient	t	p>|t|
CONS	18.3324	1.42	0.159	0.3598	2.17	0.032
FS	-1.7922	-1.33	-0.187	-0.2421	-1.40	0.163
MKTBV	-0.0264	-0.10	-0.920	0.0088	2.64	0.009
LEV	-0.875	-0.41	0.682	-0.0049	-1.81	0.073
CISTA	1.0305	9.30	0.000	-0.4526	159.11	0.000
PATTA	-0.9075	-0.58	0.563	-0.0074	-0.37	0.710
TOBINS Q	-0.1939	-0.39	0.694	-0.0606	-9.77	0.000
R^2			0.4313			
R^2 Adjusted			0.4036			
F-Value			15.55			
Prob-F			0.0000			
Hettest			224.07			
Het. Sig.			0.000			
Vif test			1. 08			
Root MSE			7.8269			

Source: STATA 13.0 output based on the result in appendix attached

Table 4.4 shows the OLS and robust regression result. The p-value of the model of 0.000 show that the relationship between conservatism and growth of the sampled firms is statistically significant. R-square shows 0.43. This shows the overall relationship between the two variables at 43%. Adjusted R^2 shows 0.40. This means that adjusted R^2 of 40% of the total variation in growth could be explained by the explanatory variables fs, mkbv, lev, cista, patta and tobin's q. The remaining 60% of the total variation in the growth and explanatory variables are caused by factors not captured in the model. The result of OLS shows that all the variables except cista under study are insignificantly related to growth. However, the robust regression shows that lev, cista, and tobin's q have 5% 1% and 1% level of significant but inversely related to growth. mkbv has positive significant relationship with growth at less than 10%. The robust result shows that all the variables except fs and patta under study are statistically significance in explaining growth. Root MSE: root mean squared error shows a value of 7.83. This indicate that the model is best fit. The study also indicates no present of multicollinearity in the independent variable with a Variance Inflation Factor (VIF) mean of 1.08 which is less than 10, this result provides evidence of the absence of collinearity. Heteroscedasticity test was further conducted to ascertain whether the variability of error term is constant or not. The result indicate presence of heteroscedasticity which implies that the error term is not constant with significant p-value of 0.000. to correct this, robust heteroscedasticity standard error test was conducted. SKTEST was used to predict the error term. This shows that the error term is not constant. Therefore robust regression was used to analyze the variable under study.

Lev, cista, and tobin's q show inverse relationship with growth. This indicates that an increase in lev, cista, and tobin's q cause about decrease in the growth of the sample firms. This result is contrary to the result of Rajan and Zingales (1998) who found negative significant relationship between lev,cista, tobin's q and growth. Therefore, we fail to reject the null hypothesis that conservatism has no significant effect on growth of sampled firms in Nigeria. This result implies that an attempt to increase the conservatism of the sampled firms can cause a decline in the growth of the companies. mktbv is found to significantly influence growth meaning that an increase in the mktbv will increase growth. in line with the result of Basu (1997) who found positive significant relationship between mktbv and growth. Therefore we fail to reject the null hypothesis conservatism no significant effect on growth of sampled firms in Nigeria. fs and patta also indicates an insignificant negative relationship with growth of sampled firms. Indicating that, fs and patta are not significantly in explaining growth of the sample firm. This result is in consonant with the result of Antoniou, Güney and Paudyal (2006) who found the relationship between firm size and firm growth to be positive and strong relation.

5. Conclusion and recommendations

This work examined the impact of accounting conservatism on firm growth of listed industrial firm in Nigeria. Using market to book value, leverage and firm size as a proxy for accounting conservatism, the result shows that on overall, accounting conservatism significantly and positively impact on firm growth. Although, on individual basis, the relationship between leverage and growth is negative. This mean that firm with high leverage might not be able to take advantage of growth opportunities. The empirical evidence suggests that although there are systematic factors at the firm and industry levels that affect the process of firm growth, growth is mainly affected by purely stochastic shocks. The most elementary 'fact' about corporate growth thrown up by econometric work on both large and small firms is that firm size follows a random walk. It is important therefore for future empirical work to attempt to explain growth by referring to variables that vary more over time within particular firms than they vary between firms (in the cross-section) at any given time.

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Appendixes

Table 1 Sample Size of thirteen Industrial Firms

S/No	Name of the Company	Year of Incorporation	Year of Listing
1	African Paints (Nigeria) PLC	1974	1996
2	Ashaka Cement PLC	1974	1990
3	Aron Crowncaps& Containers	1974	1994
4	Beta Glass Co PLC	1974	1986
5	Chemical and Allied Products PLC	1965	1978
6	Cement Company of Northern Nigeria PLC	1962	1993
7	DN Meyers PLC	1960	1979
8	First AlluminiumNig. PLc	1960	1992
9	Greit Nigeria PLc	1940	1979
10	Ipwa PLC	1961	1978
11	Larfarge Wapco PLC	1959	1979
12	Nigerian Rope PLC	1960	1978
13	Premier Paints PLC	1982	1995

Source: Generated by the Researcher from Nigerian Stock Ex change

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The Dynamics between Infrastructure and Agricultural Output in Nigeria 1981 - 2017

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Abstract

This paper investigated long run causal relationship between agricultural output and infrastructure in the Nigerian economy over the period 1981 to 2017. Given the importance of agricultural productivity to national food security, development and jobs creation in addition to poverty eradication, it becomes imperative to create enabling environment for greater productivity in the sector by engendering increase in agricultural infrastructure in all its ramifications. This paper employed the vector error correction model (VECM) to analyse data for the Nigerian economy in respect of agricultural output indices and selected infrastructure believed to have the capacity to cause changes in agricultural productivity. It was found that long run equilibrating relationship does exist between agricultural output on one hand and transport and energy infrastructure, level of agricultural mechanisation and vastness of arable land in the country on the other. In particular, changes in electricity generation, agricultural mechanisation and vastness of arable land contributed significantly to the cointegrating relationship though they slowed down agricultural output in the country. This means that agricultural output is sensitive to these selected infrastructures. Moreover, transport infrastructure and vastness of arable land Granger caused agricultural output in the country. It is hence recommended that government and other stake holders should consider opening up the rural areas by investing in feeder roads so that agricultural produce are given place value and the farmers receiving good price for their effort. The energy sector, particularly electricity generation should be approached in a holistic way given the potential in solar and wind energy in the country. Adequate and efficient electricity generation is key to enhancing agricultural value chains in the area of processing and storage.

Keywords: Infrastructure, Agricultural output and Cointegration
JEL Codes: H54

1. Introduction

Despite the huge potential of Nigeria in the agricultural sector, productivity level and contribution to growth and foreign exchange earning capacity have been low. In addition, Nigeria has not been able to attain self-sufficiency in food production and value chains that can promote job creation and enhance government revenue have not been effectively generated. One of the reasons - analysts have put forward in various for a - for this poor score card has been poor agricultural infrastructure (Clement and Ighodaro 2011). Among the factors which are considered important for agricultural productivity in Nigeria is infrastructure (Phillip, Nkonya, Pender & Oni 2009). Transportation infrastructure for instance, can have implications for marketability and even scale of production by farmers. Water and irrigation infrastructure also has implications for all year round agricultural activities and continuing production in the affiliated industries. Furthermore, energy infrastructure can make or mar the desire of a country to see agricultural products being processed in to other intermediate product, thereby sustaining value chains in sector (Fungo, Krygsman & Nel, 2017). The structure of the Nigerian agricultural sector is such that peasants form the larger percentage of those engaged in it. The sector has been a respite for many of them to escape poverty trap. Most families who have relatively succeeded in crossing from the low income status to middle income status actually leveraged on the peasant farming and affiliate activities to educate their children and somehow wriggle their way out of poverty. Given that an important policy goal of any government is to eradicate poverty, it will be wise to

use a platform such as the agricultural sector where most of the people are engaged to achieve such a goal. In using such a platform, greater level of access to agricultural infrastructure will be needed to raise agricultural productivity and hence more income for the peasant farmers. This paper is curious as to whether any relationship exist between certain infrastructure which are amenable with the agricultural sector and productivity in the sector. Accordingly, it seeks to investigate the causal and long run relationship between infrastructure and agricultural output in Nigeria. The paper is structured into five sections with the forgoing being the first section, closely followed by review of literature and theoretical framework, methodology and model specification, estimation and discussion of result and conclusion in that order.

2. Literature review

There have been a number of valuable studies on the role of infrastructure in an economy both within Nigeria, Africa and around the world. Among these studies are those which focused on the relationship between infrastructure and agricultural output. For instance, Clement and Ighodaro (2011) examined the impact of infrastructure on agricultural growth in Nigeria. The study considered infrastructure and agricultural growth in Nigeria using a time series data for over four decades and the Parsimonious Error Correction Model estimation technique. It was found that various performance indicators with respect to physical infrastructure used for the study have not been encouraging in Nigeria. The provision of infrastructure in Nigeria, particularly physical infrastructure is characterized by the predominance of public enterprises except for telecommunications sector in recent time. There was unidirectional causality between telecommunication facilities and agricultural production. The same result was found between labour and agricultural production. It was recommended that the sectoral specific effects of the various forms of infrastructure should be taken into consideration when designing policy for promoting agricultural growth in Nigeria. Poverty rates in Nigeria are high, about 54.4 percent in 2004 (NBS 2005), and agriculture remains a viable way to tackle the problem. The literature indicates that improved agricultural productivity is associated with reduced incidence of poverty (Thirtle, Lin & Piesse 2003).

Phillip et al. (2009), reviewed constraints to agricultural productivity in Nigeria given that the agriculture constitutes the single largest contributor to the well-being of the rural poor, sustaining 90 percent and 70 percent of the rural and total labor force, respectively as reported by (IFAD 2001). They observed that the sector has the highest poverty incidence (67 percent) among all occupational groups and that food security depends on improved agricultural productivity as this ultimately leads to income growth. Among the conclusions reached is the issue of aging and inefficient processing equipment, and the inability to install new processing equipment due to high offshore costs. The need to ensure greater investments in infrastructure, especially rural-urban roads, power and markets was one of the major highlight of their recommendations.

Nasir, Khalid and Mohammad (2011) examined the impact of public infrastructure (both social and physical) investment on total factor productivity in Punjab, Pakistan using the multivariate Cobb-Douglas production function for the period 1970-2005. The results showed that public investment on physical infrastructure (rural roads, village electrification and irrigation) and social infrastructure (rural education and rural health) have contributed significantly and positively to total factor productivity. The study suggested that more resources should be diverted towards the development of physical and social infrastructure that will enhance the agricultural productivity as well as reduce the rural poverty.

Adepoju and Salman (2013) empirically investigated the access to infrastructure and its effects on agricultural productivity in Surulere and Ife East Local Government Areas (LGAs) of Oyo and Osun States. Using multistage sampling procedure, data were collected through the use of structured questionnaires administered on one hundred and sixty respondents from the study areas. The data collected were analyzed using descriptive statistics and total factor productivity model to explain the effects of the available infrastructure on the farmers' productivity. The total factor productivity model used revealed that farm size and labour had positive significant effect on productivity at 5% and 1% levels of probability respectively. With regards to the infrastructural elements, improvement in soil practices and extension visits had positive significant effects on productivity and were statistically significant at 5 % level of probability in both LGAs. This finding strengthens

the position that agricultural infrastructure is an indispensable factor for greater productivity and an incentive for farmers to raise scale of production and earn more income. Palwinder and Jasmindeep (2014) analyzed the role of infrastructure in the growth of agriculture in Punjab. The paper investigates the relationship between institutional agro-infrastructure and volume of agriculture production through coefficient of correlation analysis. The analysis reveals that financial institutions have played a dominating role in increasing the volume of agriculture followed by number of regulated markets and total storage capacity with Government agencies during 1990-91 to 2011-12. The study suggested that there is significant need for improving the rural infrastructure for the development of the farming community. It also recommended that a suitable policy for agro-infrastructure is extremely essential for the agricultural development in the state of Punjab.

Fungo, Krygsman & Nel (2017) examined the role of road infrastructure in agricultural production in Tanzania. The paper investigates and empirically quantifies the impact of improved rural accessibility on agricultural production of Tanzanian smallholder farmers. Using the Tanzania National Panel Survey (NPS) data of 2012/13, the relationship between transport price, access to the market and crop yield was established. The results show a positive impact on crop yield following the reduction of transport price with an elasticity of -0.291. Farmers who have access to the bigger markets, on average, produce high crop yield. For the development of the agricultural sector, the improvement of rural road infrastructure and transport service should be linked to the roads going to the bigger markets, otherwise, the impact on agricultural sector will be low.

Soumya and Elumalai (2015) empirically investigated the relationship between rural infrastructure and agricultural productivity in the state of Karnataka. The analysis has been carried out among the districts of Karnataka for the period of 1980-2010. The paper presents a framework of availability and utilization of rural infrastructure to analyze these linkages. However, the utilization of these infrastructures has not been considered for explaining the differences in productivity. Rural infrastructure development indices have been constructed by using principal component analysis for availability and utilization indicators. Random effects model is applied to examine how different categories of infrastructure affect agricultural productivity. The study establishes that the role of availability of infrastructures in rural areas is contributing to agricultural productivity. Infrastructure utilization index also turns out to be a positive determinant of agricultural productivity. Along with provision of infrastructures, fertilizer input continues to play an important role in agricultural development.

Stephen (2015) investigated the influence of road transportation infrastructure on rural agricultural development in the Jaman South District of the Republic of Ghana. The study adopted cross-section survey research design. Purposive sampling was used to select 30 rural communities while questionnaires and structured interview schedule were used to collect data from 387 farmer households and 84 drivers by means of simple probability sampling technique. Data collection was based on both primary and secondary sources. Descriptive statistics technique was used to highlight the socio-economic characteristics of the farmers in the study area. The study established that less than 45% of the road network in the district was properly engineered and classified to be good. It was found out that, the average farm distance from the community to the main road or nearest market was approximately 2500m out of which approximately 1,375m was in bad shape. Most of the road networks linking the various communities to the main market were unpaved and immotorable during the rainy season. The study recommended the development and expansion of road infrastructure in Jaman South District making use of local resources and technology to boost agricultural development which will further augment farmers‟ income and general well-being.

Suryani et al. (2015) analyzed the impacts of rural road infrastructure on the supply of output and the demand for inputs in food crops in Indonesia. The study was based on survey data from seven provinces across Indonesia, which was carried out in 2007 and 2010. Multi-input multi output approach with a translog-profit-function was adopted as the method of analysis. Results of the study reveal that the elasticity of the supply of output and the demand for inputs on rural road infrastructure was in general inelastic. Road rehabilitation has the capacity to bring about increased supply of output and demand for inputs. This implies that improvements of rural

road infrastructure are vital in stimulating food crop production. The study therefore recommended that government should increase its budget allocation to maintain and improve road infrastructure, especially in the of food crop production areas

Adefalu, Olorunfemi and Olatinwo (2015) investigated the effect of the poor road transportation network on crop production in one of the rural agrarian local government of Kwara State, Nigeria. A well-structured interview schedule was conducted to elicit information from 120 crop farmers using a two-stage sampling technique. Findings from the study revealed that the poor road transportation network in their area had led to a reduction in their income, longer time in transporting produce to more buoyant markets, as well as incurring high transportation costs. Chi-square analysis revealed that there was a significant relationship between age, educational level, years of farming experience, and the respondents' perceived effects of poor road transportation network for their crop production. The study recommends an urgent intervention from government and stakeholders in terms of construction and rehabilitation of roads in these rural agrarian areas in an attempt to help improve the livelihoods of the farmers through enhancing transportation of produce to more buoyant markets in good condition and at less cost.

Omojolaibi and Ogbeifun (2017) provide a link between rural financing, infrastructural investment, agricultural productivity and income inequality in some selected African countries. The variables studied were agricultural output, electricity per capital and health expenditure. The Generalized least square (GLS) estimation technique was adopted to analyze the panel data drawn from secondary sources. The analysis reveals that electricity per capita and health expenditure which are proxy for infrastructural investment have significant impact on agricultural output. The policy implication that emanates from the study highlights the need for the various African States to improve on its electricity generation so as to meet the increasing demand of the growing population and also increase the percentage of health expenditure to GDP in order to improve the health sector.

Soumya and Elumalai (2017) examined the effect of rural infrastructure on agricultural development in the southern Indian state of Karnataka. The study used district-level data for 30 years period and employed infrastructure availability and utilization framework to examine the relationship between the rural infrastructure and agricultural development. The regression analysis showed that infrastructure availability index and infrastructure utilization index had positive and significant effect on agricultural productivity growth. The effect of infrastructure utilization on productivity growth seemed to be higher than that of infrastructure availability. Also, the combined effect of availability and utilization of infrastructure had larger effect on agricultural productivity. The analysis of spatial convergence of agricultural productivity growth showed that districts converge in land productivity over time.

Ogunleye, Ajibola, Enilolobo and Shogunle (2018) investigated the effects of road transport infrastructure on agricultural sector development in Nigeria from 1985 to 2014, using secondary annual time series data on agricultural development (proxy by gross domestic product in the Agricultural sector) road transport infrastructure (proxy by length of paved road per square kilometer of area) export and capital. The data were analyzed using Granger Causality test and Ordinary Least Square estimation techniques. The findings showed that a positive and statistically significant relationship exists between road transports infrastructures; it was also found that there is existence of unidirectional causality from agricultural sector development to road transport infrastructure. The study therefore, recommends that adequate and timely maintenance of existing roads should be carried out as well as enacting appropriate regulations that ensure proper implementation and completion of new road construction contracts in the country in order to boost agricultural sector development, reduce wastage of farm produce and increase the possibility of economic diversification.

This study attempted to contribute to existing knowledge empirically by updating research in the area. It also tests for validity of existing theories on effect of public investment on an economy. Moreover, conclusions from this study could shape policy direction of the government and other stake holders on issue of value chain, poverty eradication through wealth creation among the vulnerable group in the society and diversification of the Nigerian economy.

Theoretical and analytical Frame

This paper is situated within the "wage – good" theory and endogenous growth theories. The wage -

goods strategy of development was formulated by C.N. Vakil and P.R. Brahmanand in a book titled “Planning for an Expanding Economy” in 1956. Their strategy is an extension of the “Nurkesian thesis of concealed saving-potential in rural disguised unemployed” in developing countries. Vakil and Brahmanand felt that an effective use could be made of the ‘saving-potential’ by employing the disguised unemployed at the project sites by supplying them with wage-goods defined as “consumption necessities required for subsistence and performance of work”. Capital goods required for the production of these wage-goods should be accorded priority in production and the supply of wage-goods plus capital goods needed for their production must grow at a considerably higher rate than the growth rate of population to absorb the disguised unemployed”. The implementation of this strategy embraces initiating economic overheads in rural areas, investing in them, providing wage-goods to workers and mobilisation of savings. Though this strategy was formulated for India, it is an attempt to build an analytical scheme for solving the triple problems of unemployment, poverty and inequality. It is said to be analogous to the concepts of community and integrated rural development. And can be summed up as meaning that development requires the mobilization of surplus labour to produce both urban and rural capital in the form of economic and social infrastructures.

On the other hand, endogenous growth theory primarily holds that the long run growth rate of an economy depends on policy measures as against exogenous factors of the neoclassical growth theory. It emphasises technical progress resulting from the rate of investment, the size of the capital stock, and the stock of human capital. For example, subsidies for research and development or education increase the growth rate in some endogenous growth models by increasing the incentive for innovation. Further, it assumes that the production function does not exhibit diminishing returns to scale to lead to endogenous growth. Various rationales for this assumption have been given, such as positive spillovers from capital investment to the economy as a whole or improvements in technology leading to further improvements. Endogenous growth theory, hence, suggests that policies that embrace openness, competition, change and innovation will promote growth (Aghion, David & Foray 2009).

3. Methodology

The design for this study is quantitative as it seeks to analyse relationship between infrastructure and agricultural output in Nigeria. Within this design, the vector autoregressive model (VECM) was employed to test for cointegrating relationship between infrastructure and agricultural productivity in Nigeria. If a set of variables are found to have one or more cointegrating vectors, then a suitable estimation technique is a VECM. Preliminary test leading to the estimation of a VECM are unit root test to ascertain the stationarity status of variables intended to be included in the VECM. If it is confirmed that the variables are non-stationary and that they are particularly I(1) variables, the Johansen cointegration test is then employed to determine the number of cointegrating vectors among the variables. The next step will be to estimate the VECM. The VECM is a restricted VAR designed for use with nonstationary series that are known to be cointegrated. The VECM has cointegrating relations built into its specification so that the long-run behavior of the endogenous variables is restricted to converge to their cointegrating relationships and also allows for short-run adjustment dynamics. The cointegration term is known as the error correction term since the deviation from long-run equilibrium is corrected gradually through a series of partial short-run adjustments.

For instance, given that a relationship exist between output (Q) and man hour (h) in a firm, such that;

$$Q_t = bh_t \quad 2.1$$

a simple VECM in this respect can be specified thus:

$$\Delta h_t = a_1(Q_{t-1} - bh_{t-1}) + U_{1t} \quad 2.2$$

$$\Delta Q_t = a_2 (Q_{t-1} - bh_{t-1}) + U_{2t} \quad 2.3$$

The right hand side variable in (2.2) and (2.3) is the error correcting term (ECT). In the long run, this term tends to zero. Any deviation by Q_t and h_t from the long run equilibrium will condition the ECT to be non-zero and each of Q_t and h_t will automatically adjust to gradually restore the equilibrium relationship. The coefficient a_i measures the speed of adjustment of the i-th endogenous variable towards the equilibrium. This basic idea adapted in the model by Andrei & Andrei (2015) is combined to specifies the following model

of the relationship between agricultural output and selected infrastructure in the Nigerian economy.

$$\Delta linAQ_t = \alpha_1(linAQ_{t-1} - \beta_i \sum_1^5 linX_{it-1}) + U_{1t} \quad 3.1$$

$$\Delta linXi_t = \alpha_2(linAQ_{t-1} - \beta_i \sum_1^5 linX_{it-1}) + U_{2t} \quad 3.2$$

Where: Xi_t = All variables listed here other than AQ_t.
AQ_t = Agricultural Output (measured by crop production index)
$Trans_t$ = Transport infrastructure (Transport services export).
$Kmpr_t$ = Transport infrastructure (Kilometer of paved roads)
Elg_t = Electricity infrastructure (Electricity generated through gas)
AGM_t= Agricultural machinery (Tractor per 100sq. of arable land)
ARL_t = Arable land (as a percentage of total land area)
α_i = Speed of adjustment of the i-th endogenous variable back to equilibrium.

Data and variable constructs

The data on the variables in the specified model were obtained from the world development indicators for 2017 and spanned over 1981 to 2017. Agricultural Output was measured by crop production index. Arable land is given as a percentage of total land and meant to serve as indicator of natural infrastructure. Agricultural machinery, given by tractors per 100 sq. km of arable land is a measure of level of mechanization in the agricultural sector. Transport infrastructure is measured by KM of paved road. Electricity infrastructure is measured by MW generated from gas.

4. Estimates and Discursion of Result

The estimate was preceded with Some preliminary tests on the data to ascertain their normality, pattern and stationarity status. The result as presented in tables (6.1a and b) and figures (6.1) indicates that the series are normally distributed as suggested by Jarque-Bera statistic. The line graph gave us clue to the expected sign for each current series in relation with the dependent variable. The unit root test result (table 6.1b) satisfied the condition for VECM modeling as all were I(1) See appendix A.

Table: 4.1a Descriptive Statistics

	TRANS	KMPR	ELECTG	AGM	AQ	ARL
Mean	34.96156	188917.0	69.40743	5.956716	73.35417	33.94545
Median	31.71644	198701.5	67.55173	5.496302	77.75500	36.28798
Maximum	79.47318	244569.4	82.40869	8.201736	120.1400	40.62497
Minimum	2.878937	113762.0	58.13510	4.199569	26.70000	18.07921
Std. Dev.	23.89619	52771.51	7.111403	1.142988	29.78882	6.083382
Skewness	0.276085	-0.357587	0.431078	0.483111	-0.181336	-1.393848
Kurtosis	1.578651	1.438739	2.080072	2.031805	1.806352	4.024208
Jarq Bera	3.487684	4.423513	2.384371	2.806477	2.334489	13.23037
Probability	0.174847	0.109508	0.303557	0.245800	0.311223	0.001340
Sum	1258.616	6801012.	2498.668	214.4418	2640.750	1222.036
Su Sq. Dev.	19985.98	9.75E+10	1770.022	45.72473	31058.08	1295.264
Obs	36	36	36	36	36	36

Table 4.1b Unit root test result

Variables	ADF Test-Statistics > C. V @ 1%	I(d)
AQ_t	-4.1268	I(1)
$Trans_t$	-6.4778	I(1)
$Kmpr_t$	-4.1091	I(1)
Elg_t	-7.2629	I(1)
Agm_t	-4.2958	I(1)
Arl_t	4.0469	I(1)

Source: Authors' computations from E-views 8.1

In addition, the group unit root test (both for common and individual unit root processes) for the methods of Levin, Lin and Chu as well as Breittung t-statistic and Im, Pesaran & Shin W-statistic, AD-

Fisher Chi-Square, PP-Fisher Chi-square, all confirmed stationarity at first difference for the variables.

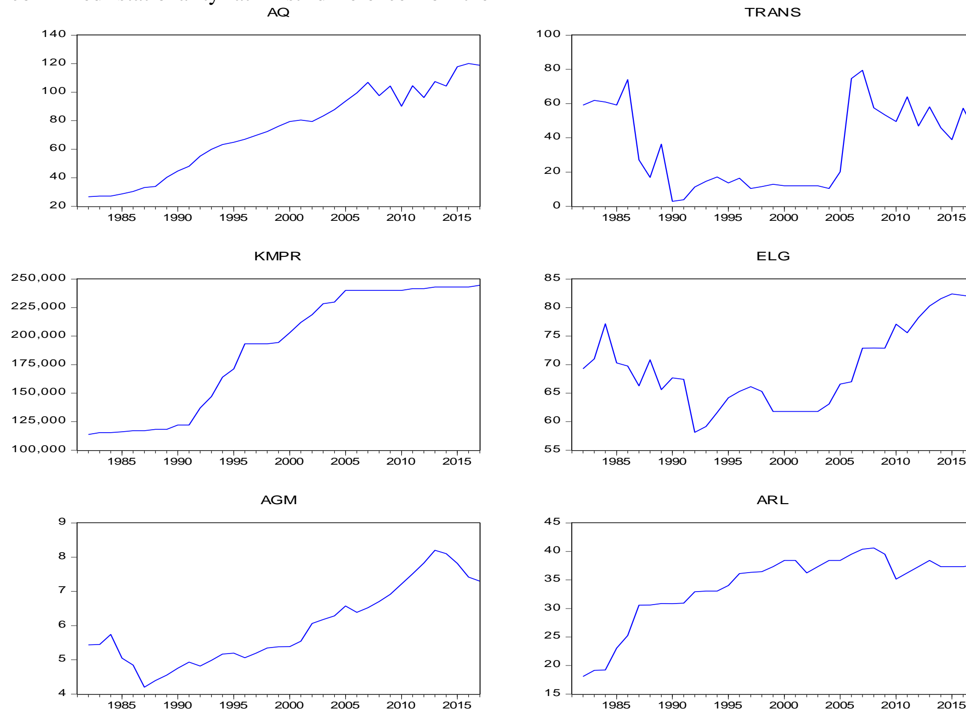

Figure 4.1: Data trends

The graph shows that although the series do appear to somehow move together, the underlining relationship do not suggest that. For example, there were periods when TRNAS and ELG were low but AQ was high. Also there were periods when TRANS and ELG were high but AQ was low. However, KMPR, AGM and ARL overall moved together with AQ.

This estimate was preceded by the necessary tests, particularly the Johansen cointegration test, to determine the number of cointegrating vectors for indication in the VECM specification. The adjustment coefficients took on negative values indicating that the VEC model has dynamic stability, this is further attested to by the inverse roots of AR characteristic polynomial all lying within the unit circle. The ECT terms are mostly negative and significant, meaning that long run relationship exists among the variables. In the short run, about 80%, 58%, 28%, 13%, 19% and 6% of disequilibrium is corrected annually by changes in AQ, TRANS, KMPR, ELG, AGM and ARL respectively. Consistent increase in infrastructure stock that are amenable to the agricultural sector can see Nigeria become diversified away from crude oil and achieve greater productivity in agriculture, creating jobs for the teaming unemployed persons. The VEC Granger causality/block exogeneity Wald test featuring AQ as the dependent variable suggests that causality runs from TRANS and ARL to AQ and not the other way. Hence, AQ is truly endogenous as expected. It is expected that infrastructure should facilitate agricultural productivity, though greater productivity in the agricultural sector can warrant for more infrastructure investment. Moreover, the other variables are exogenous as indicated by Chi-square statistic of 42.48 with p-value of 0.0000. Featuring KMPR as the dependent variable, AQ Granger caused KMPR but not the other way. (See appendix D) The impulse response analysis shows that the

response of AQ to shock from itself, KMPR, ELG and ARL is positive while its response to TRANS and AGM is largely negative over a ten period horizon. This suggests that transport infrastructure as indicated by KMPR, electricity infrastructure and arable land are important factors for agricultural output growth in the Nigerian economy. Other diagnosis like VEC residual serial correlation LM tests and VEC residual heteroscedasticity tests indicate that the VECM does not suffer from serial correlation nor heteroscedasticity. (See appendix G and H). In order to test normality of the model, we test VEC Residual Normality Tests, Orthogonalization: Cholesky (Lutkepohl) and we obtained that the series are jointly normal distributed ("p value" of Jarque Berra component is: 0, 9706) more than 5% relevance interval. This makes the VECM efficient and policy suggestion thereafter consistent and reliable.

5. Conclusion

Anchoring on the findings of this study, it is concluded that long run equilibrating relationship does exist between agricultural output on one hand and transport and energy infrastructure, level of agricultural mechanisation and vastness of arable land in the country on the other. In particular, changes in electricity generation, agricultural mechanisation and vastness of arable land contributed significantly to the cointegrating relationship though they slowed down agricultural output in the country. This means that agricultural output is sensitive to these selected infrastructures. Moreover, transport infrastructure and vastness of arable land Granger caused agricultural output in the country. It is hence recommended that government and other stake holders should consider opening up the rural areas by investing in feeder roads so that agricultural produce are given place value and the farmers receiving good price for their effort. The energy sector, particularly electricity generation should be approached in a holistic way given the potential in solar and wind energy in the country. Adequate and efficient electricity generation is key to enhancing agricultural value chains in the area of processing and storage. The level of agricultural mechanisation in the country need to be enhance to bring about production on a scale that will reduce the dependence of Nigeria on importation of food and raw materials that can be produced locally. Furthermore, it is imperative for the government to protect the arable land and reserve them for agricultural practices alone. Diversion of the arable land for other uses should be seriously frowned at as this can threaten food security in the country.

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Transportation Infrastructure and Economic Growth in Nigeria: 1981 -2017

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Abstract

This study examined the relationship between transportation infrastructure and economic growth in Nigeria using time series data for the period of 1981 to 2017. The study employed Vector Error Correction Model (VECM) granger causality test based on the result of unit root and cointegration test. The results revealed that, there is bi-directional relationship between real gross domestic product, transportation labour force, per capita road density which measures road coverage and amount of road transportation in GDP. Also, unidirectional causality relationship between from real gross domestic product, amount of air transportation in GDP, amount of rail transportation, transportation labour force, per capita road density in Nigeria in the short run. Similarly, the result showed that, there is long run relationship among the variables in the model and the granger causality test conducted on the lags of explanatory variable and the error correction term revealed a statistically significant causality at 1% significance for all the variables except that of amount of air transportation in gross domestic product. We therefore conclude that, there is a causal relationship between transportation infrastructure and economic growth in Nigeria. It is therefore recommended that, government should exert more efforts in improving infrastructural facilities in the transportation sector most especially rail transport which has the capacity to reduce the concentration of movement of goods and human on the road to ensure durability of the existing roads.

Keywords: Transportation Infrastructure, VECM Granger Causality, Economic Growth
JEL Codes: F23, R21

1. Introduction

A substantial number of studies on infrastructure around the world show a positive influence of improvements in different kinds of transportation infrastructure and infrastructure in general on economic growth and development of regions and countries as a whole. The relationship between investments in transportation and economic development has been the subject of investigation for quite some time. Despite this, the subject remains stalled in controversy. The controversy is more over the extent to which investments in transportation affect economic growth and vice versa than over the nature of the relationship itself (Lynch & DeBenedictis, 1995). However, there appears to be some degree of consensus with respect to the fact that the two variables are positively related in theory (Njoh, 2000).

In a clearer term, Gramlich (1994) said it remains essentially unclear whether the direction of causation is from transport infrastructure to economic growth or vice-versa or both. Theory more than empirical evidence explains the renewed belief that investments in transportation are capable of stimulating economic growth. In the absence of adequate empirical evidence, it is still generally believed that the U.S. government's massive investment in transportation infrastructure development in the 19th century led to the significant growth registered by the country's economy during that period (Gillen, 1996). This is an indication of transportation infrastructure stimulating economic growth. On the other hand, increasing economic activities requires adequate back up of infrastructures for its sustainability. Hence, economic boom through increase in economic activities will cause increase in transportation infrastructure (Isa and Adenij, 2015).

However, irrespective of the direction of causation, the role of transportation infrastructure in

championing economic growth cannot be overemphasized. As noted by Lynch and DeBenedictis (1995), effective transportation infrastructure permits the strategic location of industries relative to domestic and export markets through a cost effective transport system. He further explained other benefits of transportation infrastructure to include but not limited to reduction in the cost of moving goods, people, and services; facilitating accessibility; and lowering travel time (Boarnet, 1997; Forken-brock & Foster, 1990; Talley, 1996).

On the same note, developed transportation infrastructure serves economic agents in various ways. For instance, when consumers travel inexpensively, they have more money left over to spend on other necessary goods and services. Therefore, it is safe to argue that, in addition to the obvious economic benefits to the consumer, investments in transportation infrastructure contribute to improved living conditions in general. In addition, as Talley (1996) and others contend, lower transportation costs lead to lower cost of production for manufacturers.

Additionally, it is conceivable that improved transportation infrastructure can result in decreased operating costs and increased safety (Forken-brock & Foster, 1990). The benefits associated with improved infrastructure accrue not only to persons and businesses that directly use transportation facilities, but also those consumers of goods and services having transportation inputs and those associated with the generation of such products. These benefits assume many forms, including reduced prices and/or higher wages to workers (Njoh, 2000).

Previous efforts to explore the relationship between transportation infrastructure have been confined almost exclusively to developed countries (e.g., see Aschaeur,1989, 1990; Costa, Ellson, & Martin, 1987; Duffy-Deno & Eberts, 1991; Eberts, 1990; Eisner,1991; Evans & Karras, 1994; Garcia-Mila & McGuire, 1992; Garcia-Mila, McGuire, & Porter,1996; Munnell,1992), that of developing countries include (Ogun (2010); William (2016); Pravakar, Ranjau, and Geethanjali (2010); Amadi and Nyenke (2013); Radhia and Amaira (2017); Akanbi, Bamidele and Afolabi (2013) & Siyan, Eremionkhale, and Makwe (2015)) the conclusion from few ones conducted on developing counties gives reason for further examination of the subject matter owing to diverse findings. Therefore, the main objective of this study is to examine the relationship as well as the direction of causality between transportation infrastructure and economic growth in Nigeria. On this note, following the introduction, section II reviews previous literature on the subject matter, section III presents the methodology, section IV is the analysis and interpretation of result, while section V conclude the paper.

2. Literature Review

Priviledge Cheteni (2013) examined the impact of transport infrastructure investment and transport sector productivity on South African economic growth for the period 1975-2011. Vector Error Correction Model and a Bayesian Vector Autoregressive model were used as empirical tools. The models provide an insight into the dynamic shocks on economic growth through impulse responses. The VECM reveals that economic growth is influenced by inflation, domestic fixed transport investments, and real exchange rate, while it was influenced by inflation, domestic fixed transport investments, multi factor productivity, real exchange rate and second period Gross Domestic Product on the BVAR model. The study therefore recommends that to stimulate growth and productivity through infrastructure investment, the government should increase funding at the same time maintain a low inflation rate. This can be achieved by monitoring fiscal and monetary policies to maintain growth rate of the aggregate demand in combination with public infrastructure policy and other policies as well.

Ogun (2010) investigated the impact of infrastructural development on poverty reduction in Nigeria. Using secondary data for the period 1970 to 2005 and the structural vector autoregressive (SVAR) technique was adopted for the analysis. The findings reveal that infrastructural development leads to poverty reduction which leads to increase in economic growth. Results also show that though infrastructure in general reduces poverty and increase economic growth, social infrastructure explains a higher proportion of the forecast error in poverty indicators relative to physical infrastructure. This suggests that massive investment in social infrastructure in cities would drastically reduce poverty and increase growth in the urban areas.

William Agbigbe (2016) investigated the impact of transportation infrastructure on Nigeria economic development. Data were collected through personal interviews with a purposeful sample of 20 Nigerians including previous and current public and private sector transportation-linked individuals directly involved in investment, management, and policy administration. Interview data were compiled and organized using qualitative software for content analysis. Recurring responses were identified and patterns and trends documented from the data. Findings revealed corruption in awarding roads contracts, lack of contracts monitoring, and inefficient governance hindering economic development in Nigeria. The study recommends that uncoordinated and corrupt current practices of planning and funding roads and transportation infrastructures could be resolve through legislation. This could include establishing oversight agencies whose funding is based on citizen input and continued participation from prioritization through regular maintenance.

Pravakar, Ranjau, and Geethanjali (2010) , investigated the role of infrastructure in promoting economic growth in china for the period of1975 to 2007, using GMM(Generalized Methods of Moment) and ARDL(Autoregressive distributed lag model) techniques the result reveals that infrastructure and investment have played an important role in economic growth in China.

Amadi and Nyenke (2013) investigated the impact of public spending on transport infrastructure on economic growth in Nigeria. The variables studied were real gross domestic product, public spending on transport and communication, public sending on roads and construction, public spending on the other economic services (electricity and water supply), public spending on education and public spending on health. Ordinary Least Square (OLS) regression method was employed to analyze the data collected. The results showed that public spending on transport infrastructure has negative and insignificant impact on economic growth in Nigeria. The study recommended that there should be proper implementation of the fiscal responsibility laws to ensure greater accountability, fiscal discipline and prudence in the use of funds allocated to transport infrastructure.

Radhia and Amaira (2017) examined the relationship between transport infrastructure and economic growth Tunisia using annual data for the period of 1980 to 2013, using Cointegration and autoregressive distributed lag model (ARDL) technique. The findings revealed that the transport infrastructure and investment in transport infrastructure in Tunisia have a significant positive contribution to growth, which shows that each impact is strong and statistically significant. The study recommends that it is necessary to design an economic policy that will improve the transport infrastructure and to increase investment made to the sector for sustainable economic growth in Tunisia.

Akanbi, Bamidele and Afolabi (2013) analyzed the impact of transportation infrastructure on economic growth in Nigeria for the period 1981 to 2011. The variables studied were Real Gross Domestic Product, Output of the transport sector and Investments made in transport infrastructure, using the Ordinary Least Square Regression (OLS) technique. The study found that transport output and investment made on transport infrastructure in Nigeria has significant positive contribution to growth which shows that each impact is strong and statistically significant.

Siyan, Eremionkhale, and Makwe (2015) examined the impact of road transportation on economic growth in Nigeria. The variables studied were Gross Domestic Product, Capital Utilization, Government Expenditure on Road Transportation and Exchange Rate .The study employed Ordinary Least Square (OLS) method to analyze the extent of relationship between dependent and independent variables .The findings revealed that the transport sector has positive and significant impact on the economic growth in Nigeria. The study recommends that the government should come up with sustainable and implementable road development and maintenance policies that will ensure good access and flow in Nigeria.

Junjie, Zhaofang and Qiang (2011) examined the linkage between transport infrastructure and regional economic growth. A panel data model is estimated using data from a sample of 31 Chinese provinces from 1998 to 2007. The results provide strong evidence that transport infrastructure plays an important role in economic growth. Both land transport and water transport infrastructure have strong and significant impacts, while the contribution of airway transport infrastructure is

weak. Furthermore, land transport infrastructure contributes more to economic growth in locations with poor land transport infrastructure, while the investment in water transport infrastructure contribute positively to economic growth only after the investment scale exceeds a threshold level.

Xiaodong, Danxuan and Xiaoli (2014) examined the impact of transport infrastructure on economic growth in China using provincial data from 1990-2010.The study employed Feder model to analyze the impacts of transport infrastructure on economic growth. The findings shows that transport infrastructure have a positive Spillover Effect on economic growth. However, Direct Effect on economic growth is negative possibly due to Crowding-Out Effect and productivity difference between sectors.

3. Methodology

Theoretical Framework

The model for this study is rooted in the Cobb-Douglas production function as the theoretical framework and the adaption of the model of Siyan, Eremionkhale, and Makwe (2015). Given the the Cobb-Douglas production function as;

$$Q = AL^{\beta 1} K^{\beta 2} G^{\beta}\mu \qquad 3.1$$

Where; Q is total output, A is total factor productivity, K is total physical capital of the country, G is transportation capital, L is labor and μ is an error term. Equation 1 can be put in linear form by taking the natural logarithmic on both sides. The respective coefficients would then represent the output elasticity with respect to each dependent variable.

$$q = \alpha + \beta_1 l + \beta_2 k + \beta_3 g + \mu \qquad 3.2$$

From equation 2, the small letters denotes that our variables are in natural logarithmic terms. Our dependent variable, the output level of the country, has been measured by Real Gross Domestic Product. The physical output k has been proxied by the per capita road density (PRD), we use transport labour force to capture the effect of Labour (l) and g for transportation capital which in line with Siyan, Eremionkhale, and Makwe (2015) it is divided into ROT which is the amount of road transportation in the gross domestic product, AIT is the amount of air transportation in gross domestic product and RAT is the amount of rail transportation in gross domestic product in Nigeria. Hence, the model for this study is specified as thus;

$$RGDP = \beta_0 + \beta_1 TLF + \beta_2 PRD + \beta_3 ROT + \beta_4 AIT + \beta_5 RAT + \mu \qquad 3.3$$

Where;

RGDP is real gross domestic product

TLF is the transportation labour force

PRD is per capita road density

ROT is the amount of road transportation in the gross domestic product,

AIT is the amount of air transportation in gross domestic product and;

RAT is the amount of rail transportation in gross domestic product

μ is the error term

It is expected that $\beta_1 > \beta_2 > \beta_3 > \beta_4 > \beta_5 > 0$

Estimation Techniques

There are three steps involved in estimating the relationship transportation infrastructure and economic growth. The first step is to test the stationarity of the series or their order of integration in all variables. In this study, Augmented Dickey Fuller (ADF) test and Phillips-Perron (PP) test will be utilized. The second step is to examine the presence of a long run relationship among all variables in the equation. In this case, the co-integration tests will be conducted to investigate the existence of long-run relationships between the variables. Once the co-integration is confirmed in the model, the residuals from the equilibrium regression can be used to estimate the Vector Error Correction Model (VECM) in the third step. The VECM will be estimated to assess the direction of causality between transportation infrastructure and economic growth. The VECM equations take the form:

$$\Delta LA_t = \alpha_1 + \sum_{i=1}^{p} \beta_{1i} \Delta B_{t-i} + \sum_{i=1}^{p} \gamma_{1i} \Delta LA_{t-i} + \sum_{i=1}^{p} \delta_{1i} \Delta LC_{t-i} + \sum_{i=1}^{p} \varphi_{1i} \Delta LD_{t-i} + \sum_{i=1}^{p} \sigma_{1i} \Delta LE_{t-i} + \sum_{i=1}^{p} \rho_{1i} \Delta LF_{t-i} + \theta_{1,1} ECT_{1,t-1} + \theta_{1,2} ECT_{1,t-1} + \varepsilon_{1t} \qquad 3.4$$

$$\Delta LB_t = \alpha_2 + \sum_{i=1}^{p} \beta_{2i} \Delta B_{t-i} + \sum_{i=1}^{p} \gamma_{2i} \Delta LA_{t-i} + \sum_{i=1}^{p} \delta_{2i} \Delta LC_{t-i} + \sum_{i=1}^{p} \varphi_{2i} \Delta LD_{t-i} + \sum_{i=1}^{p} \sigma_{2i} \Delta LE_{t-i} + \sum_{i=1}^{p} \rho_{2i} \Delta LF_{t-i} + \theta_{2,1} ECT_{1,t-1} + \theta_{2,2} ECT_{1,t-1} + \varepsilon_{2t} \qquad 3.5$$

$$\Delta LC_t = \alpha_3 + \sum_{i=1}^{p} \beta_{3i} \Delta B_{t-i} + \sum_{i=1}^{p} \gamma_{3i} \Delta LA_{t-i} + \sum_{i=1}^{p} \delta_{3i} \Delta LC_{t-i} + \sum_{i=1}^{p} \varphi_{3i} \Delta LD_{t-i} + \sum_{i=1}^{p} \sigma_{3i} \Delta LE_{t-i} + \sum_{i=1}^{p} \rho_{3i} \Delta LF_{t-i} + \theta_{3,1} ECT_{1,t-1} + \theta_{3,2} ECT_{1,t-1} + \varepsilon_{3t} \qquad 3.6$$

$$\Delta LD_t = \alpha_4 + \sum_{i=1}^{p} \beta_{4i} \Delta B_{t-i} + \sum_{i=1}^{p} \gamma_{4i} \Delta LA_{t-i} + \sum_{i=1}^{p} \delta_{4i} \Delta LC_{t-i} + \sum_{i=1}^{p} \varphi_{4i} \Delta LD_{t-i} + \sum_{i=1}^{p} \sigma_{4i} \Delta LE_{t-i} + \sum_{i=1}^{p} \rho_{4i} \Delta LF_{t-i} + \theta_{4,1} ECT_{1,t-1} + \theta_{4,2} ECT_{1,t-1} + \varepsilon_{4t} \quad 3.7$$

$$\Delta LE_t = \alpha_5 + \sum_{i=1}^{p} \beta_{5i} \Delta B_{t-i} + \sum_{i=1}^{p} \gamma_{5i} \Delta LA_{t-i} + \sum_{i=1}^{p} \delta_{5i} \Delta LC_{t-i} + \sum_{i=1}^{p} \varphi_{5i} \Delta LD_{t-i} + \sum_{i=1}^{p} \sigma_{5i} \Delta LE_{t-i} + \sum_{i=1}^{p} \rho_{5i} \Delta LF_{t-i} + \theta_{5,1} ECT_{1,t-1} + \theta_{5,2} ECT_{1,t-1} + \varepsilon_{5t} \quad 3.8$$

$$\Delta LF_t = \alpha_6 + \sum_{i=1}^{p} \beta_{6i} \Delta B_{t-i} + \sum_{i=1}^{p} \gamma_{6i} \Delta LA_{t-i} + \sum_{i=1}^{p} \delta_{6i} \Delta LC_{t-i} + \sum_{i=1}^{p} \varphi_{6i} \Delta LD_{t-i} + \sum_{i=1}^{p} \sigma_{6i} \Delta LE_{t-i} + \sum_{i=1}^{p} \rho_{6i} \Delta LF_{t-i} + \theta_{6,1} ECT_{1,t-1} + \theta_{6,2} ECT_{1,t-1} + \varepsilon_{6t} \quad 3.9$$

where A, B, C, D, E and F represents RGDP, TLF, PRD, ROT, AIT, and RAT respectively. The symbol Δ indicates first differences. The terms ECTi refer to the error correction terms, whose coefficients measure speeds of adjustment and are derived from the long-run cointegrating relationships (i.e.$A_t = \lambda_1 B_1 + \lambda_2 C_2 + \lambda_3 D_3 + \lambda_4 E_4 + \lambda_5 F_5 + \mu$) where μ is the stationary residuals). α_i are intercepts, and p is the lag lengths. In each equation, the right hand side variable is regressed against past values of itself and past values of other variables.

The Granger causality test is applied by calculating the F-statistic based on the null hypothesis that the set of coefficient on the lagged values of independent variables are not statistically different from zero. Therefore, if the null hypothesis is rejected, then it can be concluded that the independent variable does cause dependent variable. For instance, if the F-statistic of the B (B as an independent variable in the equation (4) is significant at a 5% level, then it can be concluded that there is a short-run causal effect running from B to A. Besides the detection of the short-run causal effects, the VECM also captures the long-run equilibrium. In the ECT, the cointegrating vector (the long-run cointegrating relationships), represents the long-run equilibrium between variables. Therefore, the coefficient λ_1 for instance, represents the long-run elasticity of B with respect to A. In addition, the coefficient θ_1 of the ECT measures the speed of adjustment towards the long-run equilibrium, or the proportion of the long-term imbalance of the dependent variable that is corrected in each short-run period. Thus, the size and the statistical significance of this coefficient measure the extent to which each dependent variable has a tendency to return to its long-run equilibrium.

In this paper, a joint F test is used to detect the Granger causal relation. On the other hand, the test for the long-run considers restrictions on the coefficient of ECT (since the ECT captures the long-run equilibrium between variables). This test is based on the null hypothesis that there is no Granger causality (i.e. the coefficients are zero, $\theta_1 = 0$). The t-test is used to detect the Granger causal relation in the longrun. In addition, the joint significance of the lags of explanatory variable (*B* and *A*) and the lagged error correction term is also performed to test for the Granger causality. In the energy equation (4), the test for Granger causality of transport labour force is *H*0: $\beta_1 = \theta_{1,1} = \theta_{1,2} = 0$. Rejection of the null suggests that TLF Granger – causes RGDP etc.

The secondary data used were obtained from the World Bank Database, Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, Global Development Finance Statistics and International Development Statistics.

4. Estimation and Discussion of Findings

Unit Root Test

The empirical investigation begins with conducting unit root tests to examine stationarity properties of the variables used in the model. We applied Augmented Dickey-Fuller (ADF) and Philip Peron (PP) tests and the result is presented in table 4.1:

The test result indicates that all variables are not stationary at levels and stationary at first differences (results are reported in Table 4.1). It shows that the hypotheses of unit root are rejected for individual variables at 1% level of significance. Hence, all the variables are said to be integrated of same I(1) order. Therefore, the next step is to investigate whether there is a long-run relationship among the variables.

`Table 4.1: Unit Root Test Result

Variables	ADF		PP		Order of Integration
	Level	First Difference	Level	First Difference	
LRGDP	-1.151649	-7.969184*	-1.164906	-7.913963*	I(1)
LTLF	-0.841933	-4.693363*	-0.845944	-9.418211*	I(1)
LPRD	-1.710394	-8.973568*	-0.857643	-11.25919*	I(1)
LROT	-1.300280	-5.522887*	-1.480592	-8.011104*	I(1)
LAIT	-1.604123	-4.557095*	-1.353343	-4.302389*	I(1)
LRAT	-1.252830	-7.805543*	-1.252830	-4.302389*	I(1)
Critical Value:					
1%	-3.511262	-3.512290	-3.511262	-3.512290	
5%	-2.896779	-2.897223	-2.896779	-2.897223	
10%	-2.585626	-2.585861	-2.585626	-2.585861	

Refer to that the null hypotheses that the series contains a unit root is rejected at 1%, significance level.
Source: Authors' Computation from E-views Output 10.0

Lag Order Selection Criteria
Multivariate cointegration analysis usually begins with selection of appropriate lag for the variables. We used two criteria Akaike Information Criteria (AIC) and Schwarz Bayesian Criteria (SBC). The AIC shows the optimal lag of 7, and the SBC selected lag length of 5. In this study, the lag length has been selected using SC and we, therefore, used the optimal lag of 5 as shown in table 4.2:

Table 4.2: Result of VAR Lag Order Selection Criteria

Lag	AIC	SC
0	6.496442	6.679076
1	-12.31993	-11.04149
2	-12.85984	-10.48560
3	-14.25383	-10.78378
4	-14.84861	-10.28275
5	-16.82914	-11.16748*
6	-17.76138	-11.00392
7	-18.41255*	-10.55928

**Indicates lag order selected by the criterion.*
Source: Authors' Computation from E-views Output 10.0

Cointegration Test The study applied Johansen cointegration test to explore the long-run relationship among the variables. The result is presented in table 4.3:

Table 4.3: Cointegration Test Result

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	Prob**
R=0	160.3512*	95.75366	0.0000*
R=1	84.19690*	69.81889	0.0023*
R=2	44.91433	47.85613	0.0921
R=3	19.74494	29.79707	0.4403
R=4	5.721116	15.49471	0.7282
R=5	0.031372	3.841466	0.8594

Hypothesized No. of CE(s)	Max-Eigen Statistic	0.05 Critical Value	Prob**
R=0	76.15430**	40.07757	0.0000**
R=1	39.28258**	33.87687	0.0103**
R=2	25.16939	27.58434	0.0988
R=3	14.02382	21.13162	0.3631
R=4	5.689744	14.26460	0.6533
R=5	0.031372	3.841466	0.8594

** Trace test indicates indicates 2 cointegrating eqn(s) at the 0.05 level of significance; ** Maxeigen value test indicates indicates 2 cointegrating eqn(s) at the 0.05 level of significance.*
Source: Authors' Computation from E-views Output 10.0

As presented in table 4.3, the results for both Trace statistic and Maxi-Eigen statistic tests indicate two (2) cointegrating equations which implies that there exists long run relationship among the variables used in the model. Since all the variables are I(1) and there is evidence of cointegration, the Granger causality test should be performed in the VECM, which allows a distinction to be made between short-run and long-run causality.

VECM Granger Causality Test

Since the result of the unit root test revealed all the variables are I(1) and there is evidence of cointegration, the Granger causality test should be performed in the VECM, which allows a distinction to be made between short-run and long-run causality. The short run result of VEC granger causality/block exogeneity wald test is presented in table 4.4:

Table 4.4. Short-run Granger Causality Results based on VECM

Dependent Variable	D(LRGDP)	D(LTLF)	D(LPRD)	D(LROT)	D(LAIT)	D(LRAT)
D(LRGDP)	-	4.679010***	6.92637***	11.87082**	0.282783	5.540318
		(0.0005)	(0.0020)	(0.0183)	(0.9909)	(0.1202)
D(LTLF)	9.924788**	-	9.908924**	2.313355	3.997862	3.77026
	(0.0417)		(0.0420)	(0.6783)	(0.4063)	(0.3275)
D(LPRD)	4.618229**	6.55180	-	4.284757	6.422003	0.593494
	(0.0188)	(0.1616)		(0.3688)	(0.1698)	(0.9638)
D(LROT)	6.070294**	2.974290	14.32694***	-	1.382710	1.814481
	(0.0140)	(0.5621)	(0.0063)		(0.8472)	(0.7698)
D(LAIT)	6.308434**	16.05594***	4.258836	5.389944	-	7.878863*
	(0.0173)	(0.0029)	(0.3721)	(0.2496)		(0.0961)
D(LRAT)	3.598398**	59.76282***	12.81826	0.516714	7.521173	-
	(0.0231)	(0.0000)	(0.8122)	(0.9719)	(0.1108)	

*Notes: The null hypothesis is that there is no causal relationship between variables. Values in parentheses are p values for Wald tests with a χ2distribution. D is the first difference operator. ***, ** and * are 1%, 5% and 10% significance levels, respectively.*
Source: Authors' Computation from E-views Output 10.0

The result presented in table 4.4 revealed that there is bi-directional relationship between real gross domestic product, transportation labour force, per capita road density which measures road coverage and amount of road transportation in GDP. In other words, both real gross domestic product and transportation labour force granger causes each other, real gross domestic product and per capita road density granger causes each other and amount of road transportation in GDP granger causes real gross domestic product and vice-versa. Also, unidirectional causality relationship between from real gross domestic product to amount of air transportation in GDP, from real gross domestic product to amount of rail transportation, from transportation labour force to amount of air transportation in GDP, from transportation labour force to amount of rail transportation in GDP, from per capita road density to transportation labour force, per capita road density to amount of road

transportation in GDP and lastly from amount of rail transportation in GDP to amount of air transportation in GDP in Nigeria in the short run.

Table 4.5. Long-run Granger Causality Results based on VECM

Dependent Variable	Long –run ECT	ECT & D(LRGDP)	ECT & D(LTLF)	ECT & D(LPRD)	ECT & D(LROT)	ECT & D(LAIT)	ECT & D(LRAT)
D(LRGDP)	-0.49** (0.00)	20.71* (0.00)	10.00* (0.001)	25.34* (0.00)	15.45* (0.002)	2.43 (0.78)	13.13* (0.02)

*Notes: Values in parentheses are p values for Wald tests with a χ2distribution except the ECT. D is the first difference operator. * are 1% is significance levels, respectively.*
Source: Authors' Computation from E-views Output 10.0

The result in table 5 shows that, the value of the error correction term is negatively signed, less than one and significant. This is an indication of long run relationship among the variables in the model. It then means that, transportation labour force, per capita road density, amount of road transportation in the gross domestic product, amount of rail transportation in gross domestic product and real gross domestic product in the long run in Nigeria. It also shows that, any disequilibrium can be corrected back to equilibrium at the rate of 50 per cent. In addition, the Granger causality test is also conducted on the lags of explanatory variable and the error correction term. This result in a statistically significant causality at 1% significance for all the variables except that of amount of air transportation in gross domestic product.

5. Conclusion and Recommendations

This study examined the relationship between transportation infrastructure and economic growth in Nigeria using time series data for the period of 1981 – 2017. A functional relationship between transportation infrastructure variables and economic growth variable was developed and was estimated using Vector Error Correction Model (VECM) model granger causality test. This was based on the result of the unit root test which indicated integrated order I(1) level for all the variables as well as the cointegration test which showed 2 cointegrating equations. The findings revealed that, there is bi-directional relationship between real gross domestic product, transportation labour force, per capita road density which measures road coverage and amount of road transportation in GDP. Also, unidirectional causality relationship between from real gross domestic product, amount of air transportation in GDP, amount of rail transportation, transportation labour force, per capita road density in Nigeria in the short run. Similarly, the result showed that, there is long run relationship among the variables in the model and the granger causality test conducted on the lags of explanatory variable and the error correction term revealed a statistically significant causality at 1% significance for all the variables except that of amount of air transportation in gross domestic product. We therefore conclude that, there is a causal relationship between transportation infrastructure and economic growth in Nigeria. It is therefore recommended that, government should exert more efforts in improving infrastructural facilities in the transportation sector most especially rail transport which has the capacity to reduce the concentration of movement of goods and human on the road to ensure durability of the existing roads.

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Investigating the Impact of Exchange Rate Volatility on Foreign Direct Investment in Nigeria

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Abstract

This study examined the impact of exchange rate volatility on FDI in Nigeria from 1981 to 2016, employing ARDL. The study finds exchange rate volatility to have mixed effect on FDI: exchange rate volatility coefficient was negative in the short-run, but positive in the long-run, suggesting proficient adjustment to exchange rate gyration. Financial reform significantly spurs FDI, both in the level and dynamic model. Also, the significant long-run impact of real GDP on FDI affirming that output size matters in FDI equation. Availability of natural resources was positively significant only in the dynamic equation, but interest rate was significant and negative in both models. The study recommends the need to ensure credible policy for stabilizing exchange rate, maintaining of low interest rate, infrastructural development, and derived diversification of the economy and adoption of a well-structured financial reform strategy with the view to supplying optimal funds for investment and growth of the real economy.

Keywords: *Foreign Direct Investment, Exchange Rate Volatility, Financial Reform, Nigeria*
JEL Codes: E59, F23, O19

1. Introduction

The significance of savings to investment is so crucial that it was emphasized in the Harrod-Domar growth model as a pre-requisite for capital formation which steers investment towards achieving a sustainable economic growth. However, the savings rate in most developing countries is so low to an extent that it is often adjudged too insignificant to spur any meaningful investment that will promote sustainable industrialization and economic growth. In order to solve the problem of low investment consequent upon the deficiency in our savings and for the realization of vision 20:2020 of being among the top twenty (20) largest global economies by year 2020, there is a dire need to promote investment by allowing foreign investors to invest in our economy. The promotion of this investment will create employment opportunities for myriads of youths; ameliorate our balance of payment disequilibrium through provision of import substitution goods, technical development and poverty reduction, among others.

In the past, when the communist ideology was still extant, the radicals view the MNEs (multinational enterprises) as an imperialist tool for exploiting the host countries. Hence, no country should embrace FDI. However, after the collapse of the communist ideology, the perception of countries towards MNEs changed and they all embraced FDI. The economic benefits of attracting FDI are generally twofold, according to Sghaier and Abida, (2013). Firstly, countries with low domestic savings to spur expansion in the real economy may harness FDI as a source of external finance. This line of thoughts may particularly be in the case of developing and emerging economies. Secondly, presence of foreign companies is associated with positive externalities/ spillovers.

Kosteleton and Liargovas (2000), explained that the outflow of capital in the world grew at an average rate of almost 30% which was more than three times the growth rate of world's export in the 1980s and four times as fast as the growth of GDP, with further growth experienced in the 1990s. Despite the increase in the flow of FDI to developing countries,

the FDI inflow to Nigeria in terms of growth rate has remained relatively low (Wafure and Nurudeen,2010).

Given the significant role of FDI in developing countries, several studies have tried to ascertain the factors that influence FDI inflow into these economies. One of such factors that have recently become the source of debate is exchange rate volatility. Exchange rate volatility refers to the rate at which a country's currency in terms of others, adjust intensely to changes in market conditions or policies from time to time in line with changing broad based macroeconomic fundamentals.

However, the impact of exchange rate volatility is not straightforward as it seems. This is because researchers dissent on the true impact of exchange rate volatility on FDI. Some researchers, for example, believed that exchange rate volatility has a positive impact on FDI. This researchers justified their stand by saying FDI is a form of export-substitution. This group is known as the production flexibility theorist. On the other hand, the risk aversion theorist posited that the exchange rate volatility exerts a negative impact on FDI. This view was pioneered by the irreversibility literature of Dixit and Pindyck (1994) as cited in Osinubi and Amaghionyeodiwe (2009). Also some researchers believed that, exchange rate volatility does not have any significant impact on FDI. To this end, the impact of exchange rate volatility on FDI remains inconclusive.

This paper is poised to ascertain empirically, the effect of exchange rate volatility on FDI using time series data of Nigeria. The study also improves on extant literature by including variable to capture policy of financial sector reform as a crucial determinant of FDI. This is because financial reform process, through its effects on financial sector, removes constraint to availability of credit required by businesses for productive activities. Finance, through its interface with the real economy enters the equation as a determinant of FDI. Researchers like, McKinnon (1973); Shaw (1973); and King and Levine (1993) contended that well-functioning financial system promotes overall efficiency because it mobilizes savings, transfer resources from traditional (non-growth) sectors to modern growth-inducing ones, and also enhances entrepreneur response to opportunities. In fact, researches have accepted that, lack of/ or access to credit for would-be entrepreneurs remain a binding constraint to development in developing countries (OECD, 2014). Hence, financial sector through policies of financial reform helps to mobilize savings, and thus, provide fund-seekers with the required credits for investment, thereby improving aggregate demand and supply conditions, which in turn support innovations and entrepreneurial development (Mullineux and Murinde, 2014). It has also been suggested that foreign investors highly value a host country's financial system that is able to allocate capital efficiently, monitor firms, ameliorate, diversify and share risk, and ultimately mobilize savings. In addition, efficient domestic financial system greatly facilitates the establishment and growth of domestic suppliers of the foreign firms (Kinoshita and Campos, 2008). Furthermore, the study tends to answer some questions such as, Does the market size of Nigeria (RGDP) really attracts FDI? Also, does the presence of natural resources, particularly oil, drives FDI influx in Nigeria?

This paper is divided into five sections. Following this introductory part, Section two reviews the relevant literature, while methodology employed is discussed in section three. Data presentation and analysis is presented in Section four, while discussion of empirical findings and recommendation is contained in the last section.

2. Review of Related Literature

Stylized Facts on FDI in Nigeria

Prior to the mid-20th century, the major motivating factor that influences the flow of capital was the expansion via colonization or establishment of oversea subsidiaries (Iyoha and Itsesde, 2003). However, due to civilization and recent development in the world, the motives for FDI have changed. See Ajayi (2006) for a survey of the evidences on FDI in Africa, and elsewhere.

Dunning (1993) posited that, foreign investor's investment in the host countries is based on either, resource- seeking, that is, seeking for available cheap labour and natural resources, market-seeking which has to do with securing market shares and sales growth, efficiency-seeking takes advantages of favourable policies, market structures and economic system while the strategic-asset seeking FDI has to do with the acquisition of resources and capabilities that enhances enterprise competitiveness both regionally and globally.

FDI in Nigeria can be said to have gone through series of phases at each point in time. FDI and volatility in exchange rate in Nigeria seems to have a history with SAP as this policy had great effect on the behaviour of the two macroeconomic variables. Prior to SAP, FDI inflow to Nigeria from 1981 to 1985 was relatively low owing to the Nigerian Enterprise Promotion Decree of (1972) as amended 1977, which inclined towards increasing the participation of Nigerians in the industrial sector. Also during this period exchange rate was relatively stable. However, the introduction of SAP in 1986 marked a paradigm shift as the exchange rate become highly volatile due to the adoption of floating exchange rate regime. Moreover, the FDI inflow during this period increased consequent upon the SAP policy which allows foreign investors to invest in any sector of the economy. Thus, as the exchange rate becomes volatile, the FDI inflow increases. The reversal of SAP in 1994 led to the fall in FDI by 25% from the preceding year's level. During this period, the value of Naira becomes stable at ₦21.8/$1 from 1994 to 1998. However, due to the economic problem caused by the policy of regulating the economy, it was later replaced by guided deregulation. Following the adoption of guided deregulation, the exchange rate continues to fluctuate and it reached the peak in 1999. Up till date, the value of Naira to other currencies continues to fluctuate.

It can therefore be deduced from the above analysis that exchange rate volatility and FDI are inversely related at some point and later become positively related. The graph below confirmed the negative relationship between FDI and exchange rate volatility in the short run and positive relationship in the long run.

Theoretical Review

Aliber (1970) was the first person to investigate the impact of exchange rate variation on FDI flow. His logic was that, countries with weak money rate with the goal of increasing purchasing power may apply for attracting FDI. In other words, home country with strong currency tends to promote FDI flow to host country with weak currency. This hypothesis was known as the Aliber's hypothesis. In spite of Aliber's primary logic, the explanation was not popular until the end of 1980's and early 1990's. In fact it was this time the topic on exchange rate was seriously introduced as a major determinant of FDI as cited in Renani and Mirfatah (2012).

Sequel to the collapse of Bretton woods agreement in 1971 and the adoption of free floating exchange rate regime, the exchange rate of countries in the world is now being determined by the forces of demand and supply. Moreover, this phenomenon has led to high rate of instability in exchange rate which has propelled many researchers to look into the effect of exchange rate volatility on FDI. Theoretically, the impact of exchange rate volatility on FDI can be categorized into two broad groups. Production flexibility theorist who posits that exchange rate volatility has a positive impact on FDI, and the risk aversion proponents who believes that exchange rate volatility exerts a negative impact on FDI. Although, some researches does not find any significant impact of exchange rate volatility on FDI. The theoretical frame for studies of this nature is often drawn from the eclectic theory of Dunning (1980) that states: country with locational advantages attracts more FDI which may include availability of resource, socio-economic, institutional and political factors. Hence, one of the most important factors that is considered in this study is exchange rate volatility. The two theories that explain the mystery behind the effect of exchange rate volatility on FDI are the production flexibility theory and the risk aversion theory.

Production flexibility proponents who believe that exchange rate volatility has a positive impact on FDI viewed FDI as export substitution. Hence, increase in exchange rate volatility between the host country and the home country will induce the multinationals to serve the host country through local production facility rather than boosting export thereby insulating against currency risk (Cushman, 1985).

The risk aversion theory which was pioneered by the literature written by Dixit and Pindyck (1994) as cited in Osinubi and Amaghionyeodiwe (2009), posits that exchange rate volatility exerts a negative impact on FDI. In other words, a direct investment in a country with high rate of exchange rate volatility will have more risk stream of profit. Thus, as long as this investment is partially irreversible, there is some positive value to holding off on the investment to acquire more information. Gorg and Wakelin (2001), reported that there is no correlation between the fluctuations in exchange rate and FDI flow from USA to 12 developed countries.

Empirical Review

Crowley and Lee (2003) conducted a research on the impact of exchange rate volatility on FDI in 18 OECD countries using a quarterly bilateral data on capital inflows and outflows between USA and other countries from 1980 to 1988. The study finds impact of exchange rate volatility on FDI to be weak, when movements in exchange rate is small, but strong when exchange rate becomes excessively volatile. Udoh and Egwaikhide (2008) findings revealed that exchange rate volatility exerts a negative impact on FDI and also inflation uncertainly equally has a deleterious effect on FDI. Infrastructural development and real GDP also proves to be a major determinant of FDI.

Chukwudi and Madueme (2010) shows that volatility in dollar exchange rate has a positive and significant impact on FDI. Hence, volatility resulting from appreciation of host currency reduces FDI inflow, while volatility resulting from depreciation in host country's currency attracts FDI inflow. Elahi (2011); Renani and Mirfatah (2012) and Ullah, Haider and Azim, (2012) shows that exchange rate volatility has a negative impact on FDI in the short run, but turns positive in long run. Jeon and Rhee (2008) and Kyereboah-Coleman and Agyire-Tettey (2008) showed that, volatility of the real exchange rate has a negative influence on FDI inflow. Both Brahmasrene and Jiranyakul (2001) and Dewenter (1995) observed no statistically significant relationship between the level of the exchange rate and FDI inflows. Elbadawi and Mwega (1997) find economic growth to be an important determinant of FDI. Also depreciation in real effective exchange rate has a positive and significant impact on FDI, Walsh and Yu (2010) and Anyanwu and Erhijakpor (2004) concluded that, greater financial development in African countries leads to less FDI inflows.

Studies by Abiad, Oomes and Ueda, (2008); Galindo, Schiantarelli and Weiss, (2007) found that financial sector reform lead to more efficient allocation of investments. Seck and El Nil, (1993) and Gelb, (1989) results suggest that interest rate deregulation has a positive effect on investment efficiency and quantity, while Fowowe, (2011) and Laumas, (1990) found a positive impact of interest rate liberalisation on private investment and economic growth, respectively. Rajan and Zingales, (1998); Beck, Demirguc-Kunt and Maksimovic, (2005) associates financial reform to greater freedom of domestic firms to undertake cross-border commercial borrowing, because it helps firms to grow faster and enable them overcome financing constraints. Findings from Galindo, Schiantarelli and Weiss (2002) suggests that, for most countries, the introduction of financial reform raised the share of investment going to firms with a higher marginal return to capital/ level of efficiency. Rajan and Zingales, (2003) also argued that financial reform may be an important strategy to raise the size of domestic savings channelled through the formal financial system for investment purposes.

On their part, Demirgüç-Kunt and Detragiache, (1998); Kaminsky and Schmukler, (2002) found financial liberalisation to make financial system more fragile, raising the possibility of macroeconomic instability and so may not enhance investment and long-term economic growth.

3. Methodology

Research Design

This paper used the annual data for Nigeria, covering the periods 1981-2016, taken from the CBN, NBS, and World Bank. All the right-hand side variables are in natural log form except for the transformed variable (exchange rate volatility). Taking natural log of time series makes interpretation more robust and it also reduce the possibility of heteroskedasticity in the model. As a result of non stationarity of the majority of time series variables, the estimated co-efficient from such regression will be inconsistent and the regression result will be spurious (Engle and Yoo, 1987). However, if two or more variables are non-stationary, the linear relationship among them can still be stationary if these variables are found to be cointegrated. This study will Autoregressive distributed lag model ARDL methodology proposed by Pesaran and Shin (1999) and further extended by Pesaran, Shin and Smith (2001) will be employed in analyzing the data set for the model. Other test used in the estimation includes, unit root test, co-integration test, Error correction model and granger causality test. The ARDL approach has the advantage that it does not require all variables to be I(1) as the Johansen framework and it is still applicable if we have I(0) and I(1) variables in our set.

Theoretical Framework and Model Specification

The theoretical foundation for this study is hinged on the theory of firm in production possibility

framework. This study follows the framework of Bolling, Shane and Roe (2007) in establishing the theoretical relationship between exchange rate volatility and FDI. In a simple and straight forward manner, a production possibility framework explains the shifts of production between locations (countries) as a result of input due to foreign exchange volatility. It is assumed that the firm has two production facilities in two locations (countries), a Nigeria operation and a foreign affiliate. We also assume that the same technology is adopted by the firm in the two locations with a fixed firm-wide resource allocated to the two locations. This resource, which can be some firm-specific resource or firm-specific capital is represented as:

$$X = x_{NIGERIA} + x_{FDI} \qquad 3.1$$

Equation 3.1 shows that the firm-specific resource is a combination of the local resource ($x_{NIGERIA}$) and the foreign resource, in form of foreign direct investment (x_{FDI}). So, the firm is faced with the problem of maximizing production from the two operation facilities given the constraint on capital. It is also note-worthy that the model employed assumes that the firm is a profit-maximising with Cobb-Douglas production function and any random combination of resource or input can be employed by the firm along the input line.

Given the above assumptions of two sources of input and profit maximisation, the firm is faced with the problem of the choice of $x_{NIGERIA}$ and x_{FDI} to maximise the production value subject to a capital constraint:

$$Max: \ \pi = p_{NIGERIA}\, \chi^{\beta}_{NIGERIA} T^{1-\beta}_{NIGERIA} + Ep^{*}\,(X - x_{\ NIGERIA})^{\beta} T^{1-\beta}_{FDI} \qquad 3.2$$

wherex_i = capital investment in country *i*, T_i= other input (s) used in production of the good in country *i*, *E*= exchange rate= ₦/*foreign currency*, P_i= real food price in country *I* and *X* assumes the value in equation (1).

From (3.2), the first-order conditions from the implied Lagrangian function are:

$$d\pi/d\chi_{NIGERIA} = \alpha p_{NIGERIA}\, \chi^{\beta-1}_{NIGERIA} T^{1-\beta}_{NIGERIA} - \beta Ep^{*}\,(X - x_{\ NIGERIA})^{\beta-1} T^{1-\beta}_{FDI} = 0 \qquad 3.3$$

The rearrangement of (3.3) yields:

$$\alpha p_{NIGERIA}\, \chi^{\beta-1}_{NIGERIA} T^{1-\beta}_{NIGERIA} = \beta Ep^{*}\,(X - x_{\ NIGERIA})^{\beta-1} T^{1-\beta}_{FDI} \qquad 3.4$$

By substituting (1) into (4), we have:

$$\alpha p_{NIGERIA}\, \chi^{\beta-1}_{NIGERIA} T^{1-\beta}_{NIGERIA} = \beta Ep^{*}\,(X_{NIGERIA} + \chi_{FDI} - x_{\ NIGERIA})^{\beta-1} T^{1-\beta}_{FDI} \qquad 3.5$$

Therefore, (3.5) becomes:

$$x^{\alpha-1}_{FDI} = \frac{P_{NIGERIA}\, x^{\alpha-1}_{NIGERIA} T^{1-\alpha}_{NIGERIA}}{Ep^{*} T^{1-\alpha}_{FDI}} \qquad 3.6$$

Solving for x_{FDI} yields:

$$x_{FDI} = \left[\frac{P_{NIGERIA}\, x^{\alpha-1}_{NIGERIA} T^{1-\alpha}_{NIGERIA}}{Ep^{*} T^{1-\alpha}_{FDI}} \right]^{1/\alpha-1} \qquad 3.7$$

Equation (3.7) thus shows that FDI is dependent on exchange rate variations. This is the fundamental equation for this study. Other variables added as control were obtained from extant literature on related subject matter.

Model Specification

The theoretical link between exchange rate volatility and FDI is quite complex as the literature reviewed in the previous section. A multiple regression model will be adopted on the time series data to test for the null hypothesis proposed for the study. The model claimed that FDI is a function of exchange rate volatility, inflation, infrastructural level, real GDP and financial sector reform, natural resources availability, secondary school enrolment and trade openness. To measure domestic financial reform in this study, we obtained financial reform data developed by Abiad, Detragiache, and Tressel, (2010), captured by taking a simple arithmetic average of the 5 dimensions of policies on financial reform, excluding capital account liberalisation and securities market policy. These include credit controls and excessively high reserve requirements, interest rate controls, entry barrier, state ownership in the banking sector, and lastly, prudential regulation and banking supervision. Thus, this study explores the effect of domestically-induced policy of financial reform on FDI to Nigeria.

Mathematically,

LFDI = f(VEXCHR, FINREF, NATURES, INFRA, INTR, RGDP) 3.8

$LFDI = \beta_0 + \beta_1\ VEXCHR + \beta_2\ LNATURES + \beta_3\ LINFRA + \beta_4 LINTR + \beta_5\ LRGDP + \beta_6\ LFINREF + \mu_t$ 3.9

The independent variables were logged, except the coefficient to represent the volatility of exchange rate, which is in deviation form.

A priori Expectation
$\beta_1 > 0$ or < 0; $\beta_2 > 0$; $\beta_3 > 0$; $\beta_4 < 0$; $\beta_5 > 0$; $\beta_6 > 0$.

Our estimated ARDL Model is of the form represented in equation 3.10

$\Delta LFDI = \alpha_0 + \beta_1 \sum_{i=1}^{k} \Delta LFDI_{t-i} + \psi_2 \sum_{i=1}^{k} \Delta X_{t-i} + \varphi_1 LFDI_{t-i} + \varphi_2 \sum_{i=1}^{k} X_{t-i} + Ut$ 3.10

The β_i and ψ parameters in equation 3 represents the short run dynamics of the model, while the sum of the φ_i in the equation represents the long run relationship. The Ut represents the stochastic error term.

Measurement of Volatility
The approach employed in measuring the volatility in exchange rate is the quadratic moving average standard deviation (QMASD) as used by Marco (2011).

$$\text{Standard Deviation}(X_i) = \sqrt{\left[\frac{(X_i - X_{i-1})^2}{2}\right]}$$

Where i = Years of observation
$STANDEV(X_i)$ = standard deviation of observation X in year i.

Description of Variables
FDI = Foreign direct investment into Nigeria annually in million Naira.

VEXCHR = Volatility in exchange rate calculated using second-order moving average standard deviation approach.

RGDP = Real gross domestic product of Nigeria in million. This represents the market size of the country (Brahmasrene and Jiranyakul, 2001; Nnadozie and Osili, 2004; Chowdhury and Mavrotas, 2006; Jeon and Rhee, 2008; Kyereboah-Coleman and Agyire-Tettey, 2008).

NATURES=Natural resource availability. This is proxy by the ratio of oil export to total export in percentage (That is, oil export/total export). This could also indicate the level and extent of diversification of the host country's economy, the higher the value, the less diversified the country's economy (Leite and Weidmann, 2002; Dupasquier and Osakwe, 2006; Mohamed and Sidiropoulos, 2010; Kurronen, 2012; Asiedu, 2002, 2013).

INTEREST RATE: The interest rate is represents the cost of capital and therefore reduces incentives to accumulate more capital. High interest rate reflects cost of funds which is expected to have a negative effect on FDI following the neo-classical tradition. It is proxy by monetary policy rate (MPR). However, Hussain, Mohammed and Kamier, (2002) pointed out that, the effect of the real interest rate on investment will depend on whether the real interest rate is below or above the equilibrium rate.

INFRASTRUCTURE: This usually deals with the government's provision of physical structures, including road, bridges, electricity, and telecommunications. It is proxy with government's total capital expenditure and expected to have positive impact on FDI (Musila and Sigue, 2006; Dupasquier and Osakwe, 2006; Botric and Škuflic, 2006; Ramiraz, 2006; Kersan-Skabic and Orlic, 2007).

FINANCIAL REFORM: Financial reform is expected to have a positive impact on FDI inflow, through its role in deepening the financial sector (Nasser and Gomez, 2009; Hussain, Mohammed and Kamier, 2002). It was obtained from the data base on financial reform developed by IMF.

4. Empirical Results of Regression Estimation
Firstly, we computed the descriptive statistics of data included in the model see table 4.1.

Table 4.1: Descriptive statistics

Variables	Mean	Maximum	Minimum	Std. Dev.	Jarque-Bera	Prob	Observations
FDI	3703247	28679069	264.30	6577011	52.87	0.00	36
VEXCHR	76.59	253.49	0.61	72.04	2.62	0.27	36
INFRA	368141.6	1152796	4100.10	372323.9	3.89	0.14	36

Variables	Mean	Maximum	Minimum	Std. Dev.	Jarque-Bera	Prob	Observations
INTR	13.01	26.00	6.00	4.21	4.57	0.10	36
NATURES	95.89	98.72	91.16	2.16	2.98	0.23	36
RGDP	3175714	69023930	13779255.0	1815171	5.29	0.07	36
FINREF	12.89	18.00	5.75	4.61	4.28	0.12	36

Source: Authors' computation using EViews 2009

The descriptive statistics above showed that all the variables are positively skewed, except natural resources availability and financial reform that are negatively skewed. The Jacque-Bera statistics failed to reject the null hypothesis of normality for the entire variable, except FDI which was found not to be normally distributed. Other variables, like secondary school enrolment, trade openness and institutional variables were dropped from the model following preliminary statistical properties. Natural resource availability may collinear with institutional variables because dependence on natural resources, often breeds rent-seeking in governance, thereby undermining institutional quality and policy environment (North, 1990), hence natural resource availability can therefore closely capture the economic structure of countries.

Unit Root Test

Prior to our empirical analysis, we tested for stationarity in the data used in the econometric estimations. This is necessary for the purpose of ensuring consistency in subsequent econometric modeling and avoiding spurious regression which would be meaningless for policy formulation. The Augmented Dickey Fuller test in table 4.2 shows that all variables are stationary after first difference at 5% significant level, assuming the equation includes both trend and intercept. While real GDP is stationary at first difference, assuming only intercept. However, the other exchange rate volatility is stationary at level assuming intercept and trend while log interest rate is stationary at level assuming only intercept.

Table 4.2: Unit root (Non- Stationarity) Test

Variables	ADF t-statistics	ADF critical values	Order of Integration	Remarks
LFDI	8.169	3.5484	I(1)	Stationary
VEXCHR	4.0679	3.5484	I(0)	Stationary
LNATURES	6.2606	3.5484	I(1)	Stationary
LRGDP	3.2229	2.9511	I(1)	Stationary
LINFRA	6.0563	3.5484	I(1)	Stationary
LINTR	6.7405	3.5484	I(0)	Stationary
LFINREF	4.213	3.5484	I(1)	Stationary

Source: Authors' computation using EViews 2009

Given that the variables are not integrated of the same order and none of the variables is stationary at second difference, we employed the autoregressive distributed lag model (ARDL). The ARDL model deals with single cointegration and introduced originally by Pesaran and Shin (1999) with further extension by Pesaran, Shin and Smith (2001). The ARDL approach has the advantage that it does not require all variables to be I(1) as the Johansen framework.

Cointegration Test

We employed the ARDL bounds test method in conducting the cointegration test, due to the properties of the data.

Table 4.3: Cointegration Test : F-Bounds Test

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.928903	10%	1.99	2.94
K	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Source: Authors' computation using EViews 2009

Testing cointegration in ARDL modelling involves comparing the compound F-statistics with the upper critical bound (UCB) and lower critical bound (LCB) (Pesaran, Shin and Smith, 2001). The null hypothesis of no cointegration is tested against alternate of cointegration. The result of the estimation shows that the F-statistics of 4.9289 is higher than the lower critical bound of 2.27 and also higher than the upper critical bound 3.28 at 5% level of significance. Thus, we reject the null hypothesis and conclude that there is a long run relationship among the variables in the model.

Lag Selection Criterion

The selection of appropriate lag for the autoregressive representation of a cointegrated system is very crucial in cointegrated modeling (Ebiringa and Emeh, 2013).

Table 4.4: Lag Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-143.31	NA	2.84e-05	9.394845	9.715475	9.501125
1	21.58	247.3545	2.19e-08	2.150908	4.715946*	3.001146
2	86.19	68.64527*	1.33e-08	1.175451	5.984897	2.769647
3	178.93	57.96363	4.3e-09*	-1.558412*	5.495442	0.779741*

** indicates lag order selected by the criterion; LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn information criterion;Source: Authors' computation using EViews 2009*

The lag selection result in **table 4.4** shows that almost all the selection criteria suggest lag 3 as the maximum lag. The study preferred to use AIC based on its efficiency in selecting the representation of cointegrated system through the selection of a model which minimizes estimated criterion value (Ebiringa and Emeh, 2013). Thus, the studies preferred lag 2 periods for the dependent variable and lag 3 periods for the independent variables. This is done with the aim of avoiding over-parameterization of the model which might result to high rate of insignificant parameters. However, limited lags can lead to loss of information. Our estimation procedure follows from the general to specific modeling to arrive at our acceptable model.

Autoregressive Distributed Lag Model

The result is presented in Table 5.5.

Table 5.5: Empirical ARDL Models

Dependent Variable: LFDI				Dependent Variable: D(LFDI)			
Method: ARDL				Method :ARDL			
Sample: 1981-2016				Sample : 1981-2016			
Included-Observation: 32 after adjustments				Included-Observations: 32 after adjustments			
Variable	Coefficient	t-statistic	Prob.	Variable	Coefficient	t-statistic	Prob.
C	-130.26	-2.15	0.05	C	-0.08	-0.35	0.81
VEXCHR	0.01	0.62	0.54	D(VEXCHR)	-0.0228	-3.58	0.004
LFINREF	9.46	3.19	0.009	D(LFINREF)	6.4941	4.74	0.008
LINTR	-2.10	-2.41	0.03	D(LINTR)	-1.5062	-3.46	0.006
LNATURES	8.72	0.82	0.42	D(LNATURES)	11.0196	2.68	0.022
LRGDP	5.89	6.23	0.001	D(LRGDP)	-15.7751	-5.31	0.003
LINFRA	-1.35	-2.13	0.05	D(LINFRA(-1))	2.0752	5.91	0.001
				ECM(-1)	-0.9834	-8.18	0.000

Dependent Variable: LFDI Method: ARDL Sample: 1981-2016 Included-Observation: 32 after adjustments				Dependent Variable: D(LFDI) Method :ARDL Sample : 1981-2016 Included-Observations: 32 after adjustments			
Variable	Coefficient	t-statistic	Prob.	Variable	Coefficient	t-statistic	Prob.
R-squared	0.994484			R-squared	0.868716		
AdjustedR-squared	0.982900			Adjusted R-squared	0.760599		
F-statistics	85.85106(0.000)			F-statistics	85.85106(0.000)		
Durbin-Watson	2.228601			Durbin-Watson (DW)	2.056204		
Diagnostic Test							
Residual Normality (Jacques Bera)				0.601413 (0.740295)			
Breusch-Godfrey LM test				0.155756(0.8583)			
Breusch-Pagan Godfrey heteroskedasticity test				0.940013(0.5703)			
Ramsey-Reset Test				0.013795(0.9091)			

**Probability value of Diagnostic test in parenthesis.; L represents Log*
Source: Source: Authors' computation using EViews 2009

The empirical result shows that all the explanatory variables explain 76.1% variation in FDI in the short run, while it explains 98.3% in the long run. The overall model was significant at 1% level. Furthermore, the Durbin-Watson statistics show absence of serial correlation in the models. The ECM term is correctly signed as significant at 1% with a speed of convergence to long run equilibrium of 98.3%. Thus, 98.3% disequilibrium in the long run is recovered annually.

All the variables in the long run conform to economic theory, except infrastructure. However, only real GDP failed to conform to economic theory in the short run. Table 4.5 presents the estimation result of both the long-run static model and the short run dynamic model, together with some diagnostic test to ascertain the validity of the model.

The results of the models revealed that exchange rate volatility (EXCHR) has a mixed effect on FDI to Nigeria, although not significantly in the long-run, but the coefficient of FDI was significant in the short-run dynamic model. Thus, a 1% increase in exchange rate volatility significantly reduces FDI by 0.022% in the short-run, while it increases it by 0.017% in the long-run. The availability of natural resources (ratio of oil export to total trade) has a positive and significant impact on FDI in the short-run, but the effect is positive and not significant at the conventional 5% level of significance in the long run..

Moreover, financial reform significantly increases FDI inflow both in the short- and long-run. The result confirmed conclusion by McKinnon (1973) and Shaw (1973) that, financial reform process lead, on average, to improvements in propensity to save, and ultimately stimulate both investment and economic growth. Furthermore, the availability of infrastructural facilities significantly increases FDI inflow in the short-run but reduces FDI inflow in the long-run, although not significant at the conventional level of significance. Coefficient of real GDP has a negative and significant impact in the short run; however, the effect turns positive in the long run. Interest rate has a negative and significant effect on FDI in both the short- and long-run.

Diagnostic Test

The model was subjected to series of diagnostic test to ascertain its validity and robustness. The Jacques-Bera statistic with P-value of 0.7403 failed to reject the null hypothesis of normality of the residual. Breusch- Godfrey LM serial autocorrelation test with P-value of 0.8583 shows non rejection of the null hypothesis of serial autocorrelation. Breusch-Pagan-Godfrey heteroscedasticity test with P-value 0.5703 fails to reject the null hypothesis of homoscedasticity. The Ramsey misspecification test with P-value 0.9091 provided no evidence of model misspecification.

Stability Analysis: Cusum and Cusum Square

The stationarity of variables cannot be said to mean its model stability. The stability of the parameters in the short-run unemployment model is examined using the plots of the Cumulative Sum of Recursive Residual (CUSUM) and Cumulative Sum of Squares of Recursive Residual (CUSUMSq). The test result in Figure 1 confirmed that the model is stable and usable for forecasting, since the CUSUM and CUSUMsq are within both critical lines of 5%

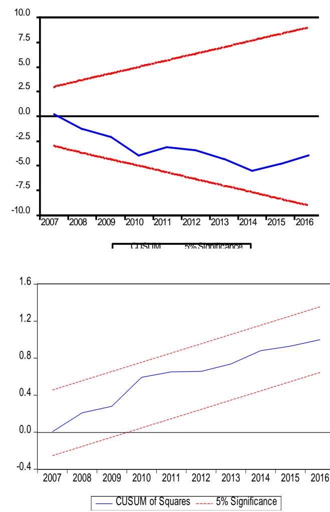

Figure 4.1: CUSUM and CUSUM Sq of Residuals

5. Conclusion and Recommendations

This study ascertains the impact of volatility in exchange rate on FDI inflow to Nigeria and whether financial reforms matter, using autoregressive distributed lag (ARDL) techniques on time series data from 1981 to 2016. The result presented includes both the long-run (level) model, and with the estimation of a dynamic short-run model for robustness check. The study shows that exchange rate volatility has negative, but significant impact on FDI in the short-run, and a positive impact in the long-run, although was not significant. This result suggests that while exchange rate volatility had a short run distortionary effect on FDI, its effect due to proficient adjustment mechanism by investors make the impact of exchange rate volatility and FDI influx to be in tandem. More so, in the long run, the increasing exchange rate fluctuation, especially incessant depreciation in local currency, may induce foreign investors to infact invest in the domestic economy to reap the ensuing export pricing differentials. In the short-run, the foreign investors hold back on their investment to ascertain the level of exchange rate volatility as investing in highly unstable economy might have a negative impact on their stream of income.

Furthermore, availability of natural resources, particularly oil, has a positive impact on FDI both in the short and long run, but coefficient was not significant. In addition, financial reform significantly increases FDI both in the long and short-run. Hence, the removal of access constraint to fund could drive FDI. Interest rate significantly reduces FDI in both the short-run and long run. High interest rate may favour influx of portfolio investment via carry-trade mechanism. Level of infrastructure significantly increases FDI inflow in the short run but effect was found to be negative in the long-run. This may indicate the inadequacy of sustained provision of infrastructural facilities in the country which may result in FDI withdrawal in the long-run. Real GDP significantly increases FDI in the long-run, but undermines it in the short-run, suggesting that short-term gyration in domestic output may act as a negative signal for foreign investment.

To this end, the study recommends the need for policy makers to adopt effective currency stabilizing policy to safeguard the value of the domestic exchange rate, and prop up foreign investors' sentiments. Monetary authorities should continue with financial reforms measures since it removes constraint to credit and so boost resource allocation efficiency. There is also the need for interest rate to be gravitate to its optimal levels to remove any disincentive to investment.

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Analysis of the Impact of Financial Inclusion on Poverty Reduction in Minna Niger State - Nigeria

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Abstract

Undoubtedly, financial inclusion has been considered as one of the ways of reducing poverty because it favours mainly low-income groups by bringing a lot of welfare benefits to them through the basic services offered by financial institutions such as mobilization of savings, risk reduction, monitoring and advise, cost mitigation, reduction of information asymmetry, and allocation of funds to the most competent entrepreneurs to promote technological innovation and hence economic development. The study investigated the impact of Financial Inclusive on poverty reduction in Minna using logistics regression and the result revealed that formal ownership of the account, Financial adviser, teller point, and access to formal credit lead to an improvement in the welfare of people and statistically significant. Therefore, the study concludes that formal ownership of the account, financial adviser, teller point, and access to credit will help in the reduction of poverty in Minna Metropolis. Thus, recommend fiscal regulation, installation of teller or ATM point in strategic places in both the rural and urban area, the establishment of customer advisory unit or department in commercial banks, and checkmate of the commercial bank's loan procedure by Central Bank of Nigeria,

Keywords: Financial inclusive, logistic regression, Niger state, poverty
JEL Codes: H81, G21, C25, P46.

1. Introduction

The principle of financial inclusion has assumed a more level of importance in recent times due to its perceived importance as a driver of economic growth (Okaro, 2016). Giving access to the hundreds of millions of men and women all over the world who are presently excluded from financial services would provide the possibilities for the creation of a large depository of savings, investable funds, investment and therefore global wealth generation(CBN, 2013). In other words, access to financial services, that are well suited for low-income earners promote enormous capital accumulation, credit creation, and investment boom (Onaolapo, 2015).

According to the World Bank (2013) report on poverty, there are still around 2.5 billion adults in the world who are financially excluded, meaning they have no savings or access to credit and other financial services. The report added that almost 80 percent of them live on less than $2 a day. The report documents that savings and payments are strongly linked to poverty reduction. It stressed that access to credit, insurance, savings, and payments opens up economic opportunities for the bottom 40 percent to increase their incomes sustainably.

Furthermore, Global Financial Inclusion Findex data for 2012 revealed that only around 50% of adults (people aged 15 and above) in the world have at least one bank account in the formal financial system (Demirgüç-Kunt and Klapper, 2012). However, this percentage of individuals with a bank account varies considerably between developed and developing countries. In developing countries, banking penetration rates are far below the global average. In Sub-Saharan Africa, for instance, the percentage of adults with a bank account is 24.1%, as compared to 33%, for South Asia and 39% for Latin America and the Caribbean (Little Book of Financial Inclusion, 2012). The problem of involuntary financial exclusion requires interventions to address market failures such as asymmetric information, lack of competition in the markets or insufficient infrastructure (Camara, Peña, and Tuesta, 2014). These failures make it difficult for certain population groups, such as low-income groups or those who have traditionally been more vulnerable, such as women, young people or people

who live in rural areas, to use formal financial services despite the benefits (Camara et al., 2014).

Recently, According to the Global Findex database 2017, globally, 3.8 billion people which represent 69 percent now have an account at a bank or mobile money provider, a crucial step in escaping poverty. This is up from 62 percent in 2014 and just 51 percent in 2011. From 2014 to 2017, 515 million adults obtained an account, and 1.2 billion have done so since 2011, While in some economies account ownership has surged, progress has been slower elsewhere, often held back by large disparities between men and women and between the rich and poor (Omotayo, Ademola, and Oluwayemi, 2017). The gap between men and women in developing economies remains unchanged since 2011, at 9 percentage points (Demirguc-kunt, Klapper, Singer, Ansar, and Hess, 2018). More also, about 1.7 billion adults remain unbanked without an account at a financial institution or through a mobile money provider. Because account ownership is nearly universal in high-income economies, virtually all these unbanked adults live in the developing world (World Bank (2018). Indeed, nearly half-lives in just seven developing economies: Bangladesh, China, India, Indonesia, Mexico, Nigeria, and Pakistan (Demirguc-kunt, et al, 2018). Based on this financial inclusion is on the rise globally, accelerated by mobile phones and the internet, but gains have been uneven across countries. (World Bank (2018).

In Nigeria, several attempts and approaches had been adopted by various governments to reduce or alleviate poverty. Some of these approaches are; Green Revolution by Shagari Administration in 1980's, operation feed the nation by Obasanjo Administration in 1978, Better life by Babangida, 1986, National economic empowerment development strategy (NEEDS), at State and local level the acronyms are SEEDS and LEEDS, Millennium Development Goals, Subsidy Reinvestment Programme, Graduate Internship Scheme training, N-power, Agricultural Credit Guarantee Scheme, and several other poverty alleviation strategies. However, despite these various poverty alleviation strategies, Nigeria is yet to transform these with her resources both human and material into reasonable and significant welfare improvement for the majority of its population and to relative reduce the growth rate of poverty.

Despite, the important role played by financial inclusion in reducing poverty, disadvantage or low income group or poor people in the rural areas know no little about it. This will help to deepen our knowledge on economic policies designed to encourage financial inclusion in Niger State. It is imperative to note that theories and empirical evidence have suggested that financial development leads to poverty reduction. Aderibigbe (2001) argued that access to fund, adequate credit facility and technology access reduce absolute number of people living in poverty. Similarly Jabir (2015) in Ghana, asserted that personal insurance, credit from formal financial institution, mobile payment and savings have significant poverty reduction effect. Furthermore, Global Financial Inclusion Findex data for 2017 opined that Mobile money services which allow users to store and transfer funds through a mobile phone can help improve people's income earning potential and thus reduce poverty and access to mobile money services delivered enabled women-headed households to increase their savings by more than a fifth; allowed 185,000 women to leave farming and develop business or retail activities; and helped reduce extreme poverty among women-headed households by 22 percent (World Bank, 2018).

Literature on financial inclusion have largely focused on indices of financial inclusion without focusing on its impact. Despite, the important role financial inclusion plays, few empirical studies exist which analyses the impact of financial inclusion on poverty reduction. Some of these authors only provided the descriptive statistics of the measurement of financial inclusion without testing for any statistical significance (Mauri and Manish, 2010; Onaolopa and Odeya, 2012; Solomon, 2014; and Cyn-young and Rogelio, 2018). Others also provide the link between the individual characteristics without examining the impact it has on poverty. These therefore, leave a gap to be filled on the link between financial inclusion and poverty reduction nexus.

One other problem that this study has identified and would deal with is dependent bias. For instance, ratio of deposit to GDP and credit to GDP are often noted of making the financial system deep without delivery access to all (Demirgüç-Kunt and Klapper, 2012). Therefore, the use of these proxies only tell us the depth of the financial system but not the usage aspect of it.This is because it is not everybody

who has access to formal financial services who actually use it. Also, micro data has an advantage over macro data because when using macro data it is difficult to distinguish the poor from the rich. In this regard, the purpose of achieving universal financial access will not be met. In order to counteract these problems, there is the need for us to correct dependent or endogineity bias. However, the use of micro-level data is more appropriate in dealing with this problem.

To the best of our knowledge, it is only (Sanya and Olumide, 2017) who have applied the descriptive statistics and a Logistic regression model to examine the relationship between financial Inclusive and poverty reduction in Ekiti State. The study was carried out in different geopolitical zone of the current study which we expected different results because of Economy, social, geographic and institutional different of individuals involved. This will provide us with more robust findings which can be used for policymaking and implementation in Niger State and Nigeria as a whole and other developing countries concerning the issue of financial inclusion and poverty reduction

2. Literature Review and Theoretical Framework

Okoye, Kehinde, Erin and Modebe (2017)defines financial inclusion as the way financially excluded and underserved people in a society have access to a range of available financial services without any discrimination. According to the African Development Bank (2013), financial inclusion refers to all initiatives that make formal financial services available, accessible and affordable to all segments of the population. Financial inclusion has several benefits for national development. Financial inclusion (FI) connotes increasing popular access to formal financial services such as a bank account, and/or the use of credit and saving facilities of banks (Efobi, Beecroft, and Osabuohien, 2014). On the other hand, financial exclusion refers to obstacles that hinder access to formal financial services (such as the distance to financial institutions, costs of financial services, lack of widespread knowledge of available services, integrity of regulatory and institutional infrastructure etc.), despite the exceeding marginal benefits over marginal cost from using these services (Efobi, et al., 2014).

According to financial inclusion working group guideline note (2017), Financial inclusion is the right of every individual to have access to a full range of quality financial services in a timely, convenient, informed manner and at an affordable cost in full respect of his/her personal dignity. This is provided to all segments of the society, with a particular attention to low-income poor, productive poor, migrant workers and people living in remote areas irrespective.

The word poverty derived from Latin word known as pauper meaning poor World Bank, (2013) defines poverty as hunger, lack of shelter, sickness and inability to attend school, inability to read and write, joblessness, fear for the future, highly infant and child mortality. (Aku, Ibrahim, and Bulus, 1997) cited by (Sanya and Olumide, 2017), define poverty from five perspectives as personal and physical deprivation experienced as a result of health, nutrition, literacy and educational disability and lack of self confidence, Economic deprivation due to lack of access to property, income assets, factors of production and finance, social deprivation brought about as a result of denial from full participation in social, political and economic activities, cultural deprivation in terms of lack of access to values, beliefs, knowledge, information and attitudes which deprived the people of the ability to control their personal destinies and political deprivation emanating from lack of political voice to participate in decision making that affect their lives (Gafar, Mukaila, Raji and Micheal, 2011).

According to United National official, Fundamentally, poverty is a denial of choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society.

Julian and Ana (2010) investigated financial inclusion and poverty in Peru, employed panel data, variables used are micro loans, access to lending and access to technology. The study revealed financial inclusion does not have an alleviating effect on various indicators of poverty. Suggested increase access to communication such as internet. Contrarily, Jabir (2015) investigated financial inclusive and poverty reduction in sub-Sahara Africa in Ghana, employed treatment effect version of Heckman sample selection model and propensity matching (PSM) on personal insurance, credit from formal financial institution, mobile payment and savings and found financial Inclusion have significant poverty reduction effect. Recommended countries should mainstream financial Inclusion in

their poverty reduction strategies and programmes. The results of both have an empirical background which can be used for policy here but the research is conducted in the different geographical sphere, therefore, the result could differ from countries to countries in terms of socioeconomic variations. Similarly, Cyn-Young and Rogelio (2018) studied financial inclusive, poverty and income inequality in the Philippines, employed qualitative choice model on rule of law, population, education completion, literacy and low income and found that financial inclusive significantly reduce poverty. Suggested stronger rule of law, provisions for young and old aged population. The researcher failed to used empirical analysis to discuss the effect of financial inclusion on poverty and that of the determinants.

Murari and Manish (2010) examined poverty alleviation through financial inclusion in India, employed qualitative choice model on savings, affordable credits, financial advice and payments remittance and found that financial inclusion provides entrepreneurial opportunity for household upliftment. Suggested stringer credit facilities and provision of bank guarantees. Solomon (2014) studied financial inclusion, a tool for poverty alleviation and income redistribution in developing countries in Nigeria, employed content analysis and found that financial inclusions constitute important tool for poverty alleviation. Suggested continues effort of stakeholders in financial sector. Also, Sanya and Olumide (2017) studied financial inclusion as an effective policy tool of poverty alleviation in Ekiti state Nigeria, employed descriptive statistics and multinomial logit model using commercial bank branches, cash centres, overdraft and special fund access to customers and found that employment, marital status, educational level, distance household size etc. are the determinant of poverty and financial inclusive. Suggested introduced grants, draft and special fund that can be easily accessible by customers.

Okoye, Kehinde, Erin and Modebe (2017) examined financial inclusion: a panacea for balance economic development in Nigeria, employed OLS techniques used loan to rural area, loan to deposit ratio and branch network and found that financial inclusion has promoted poverty alleviations in Nigeria. Suggested increase rural delivery and effective resources allocations. Onaolapo and Odetayo (2012) studied financial inclusion in Nigeria from the perspective of Microfinance banks using a survey design method. They find that access to financial services through Microfinance institutions by less privileged people promotes employment generation, reduction in poverty and overall economic growth. Their study only provides descriptions of the techniques used without testing for statistical significance.

Jalilian and Kirkpatrick (2005) assess the impact of financial development on poverty reduction in both developed and developing countries using data from Dollar and Kraay (2002). They find that financial sector development policy contributes to poverty reduction after controlling for key macro-economic variables such as inflation rate, share of trade and public spending. They also find that the impact of financial development on poverty reduction will be affected, only by any change in income inequality resulting from financial development. However, they were not able to clearly state their measurement of the financial development. One can deduce from their measure of financial sector development using income growth and improved supply of access of financial services to the poor as an element of financial inclusion. Again, they used the Gini concentration ratio to proxy for inequality, which clearly shows some semblance of poverty reduction measure.

Abdin (2016) investigated financial development and poverty reduction in Bangladish, employed OLS and GMM, credit access and savings opportunity were variables used and found that financial development has negative impact on poverty reductions. Suggested reform financial sector, liberalization of financial sector, provision of credit facilities and promotion of Microfinance bank. Similarly, Madhu and Giri (2016) in India employed ARDL model and Granger causality and found that there is long run relationship between financial development and poverty. Recommended increase financial accessibility.Accordingly,Akhter and Daly (2009), examine the role of financial development on poverty reduction in 54 developing countries using Fixed Effect Vector Decomposition Model (FEVD) and find that financial development is conducive for poverty reduction but the instability accompanying financial development is detrimental to the poor. They also posit that there is a positive relationship between financial development and financial instability in those countries. One of the weaknesses of their model is that they do not

consider simultaneity bias in the model which can lead to endogeneity problems.

Adonsou and Kevin (2016) in US employed two-stages least square, used credit to GDP, rule of law, poverty gap and ethnic tension and found that Banks have some ability to reduce poverty. Recommended encourage bank assets, credit facility to household and enforce rule of law. Quartey (2005) assesses the effect of financial development on savings mobilization and poverty reduction in Ghana using time series data spanning from 1970-2001 applied OLS and Granger-causality, and found that financial sector development does not Granger-cause savings mobilization in Ghana, it induces poverty reduction. Again, he finds that savings do Granger-cause poverty reduction in Ghana. He contends that the effect of financial development on poverty in Ghana is positive but insignificant. He uses M2 as a percentage of GDP and domestic credit to the private sector as a measure of financial development. Broad money supply has deposit as its component which signifies the level of financial deepening in Ghana hence financial inclusion. He uses per capita consumption as a measure of poverty reduction signaling the effect of poverty reduction when it is Granger causal with financial development. One of the key strengths of his multivariate test is that he was able to establish the short run and long run effects of both of his models. However, he did not test for possible non-linearity and interactive effects in his model.

Jones (2008) study the effect of poverty reduction on financial inclusion using British Credit Unions as a case study. The results from his review show that credit unions in Britain are effective in reaching financially excluded people in Britain. His results suggest that credit unions help the very poor to become financial included in the formal financial sector. However, since he did not use quantitative data, it is difficult for us to establish any correlation or causal relationship between poverty reduction and financial inclusion in Britain. While controlling for certain characteristics such as depth of private banking credit, inflation rate, and others, Honohan (2008) examines the effect of access to finance using over 160 countries worldwide including SSA and finds a correlation but not a causal link between access to finance and poverty reduction. His results are somewhat consistent with Rewilak (2013) who finds that financial development may alleviate poverty but not universally. His model is likely to suffer from endogeneity bias since he did not control for possible simultaneity biases.

Anwar, Uppun and AbdiRevian (2016) examined the role of financial inclusive to poverty reduction in Indonesia, employed panel data on growth, investment and geography and found that financial inclusive lead to poverty reduction (negative relationship). Suggested increase investment. Similarly, Aderibigbe (2001) in Nigeria employed qualitative choice model found that access to fund, adequate credit facility and technology access reduce absolute number of people living in poverty. Recommended access to fund, adequate credit facility, and access to technology. Odhiambo (2009), examines the role of finance, growth and poverty nexus in South Africa, using trivariate Granger-Causality Model (TGCM) and finds that both financial development and economic growth Granger-cause poverty reduction in South Africa. He again notes that economic growth Granger-causes financial development hence leads in the process of poverty reduction in South Africa. He uses the vector error-correction model to differentiate between the short and long run causal relationship he wanted to establish. He measures the level of financial development using the ratio of broad money to GDP as others have done suggesting that there is financial deepening which will lead to financial inclusion hence poverty reduction. However, he did not control for any macroeconomic consequences that might endanger the model. His findings are consistent with Odhiambo (2010) who finds a distinct causal flow from both financial development and savings to poverty reduction in Kenya by the same methodology as in the case of South Africa.

Imai et al. (2010) look at the impact of Microfinance institutions (MFIs) on poverty reduction in India using cross-sectional data and find that loans for productive purposes were more important for poverty reduction in rural than in urban areas. They also establish that living in urban areas, and simple access to MFIs, have larger average poverty-reducing effects than the access to loans from MFIs for productive purposes. Their results suggest that the presence of Microfinance institutions enables the rural poor to have access to financial services such as loans which could help in reducing their poverty level when applied appropriately. Access is an important component of financial inclusion so the influence of MFIs through access to the rural poor

is an indicator of financial inclusion. Imai, Gaiha, Thapa, and Annim (2012) once again examine the effect of Microfinance institutions on poverty reduction in Latin America and the Caribbean using cross-sectional and panel data and find that Microfinance institutions significantly reduce poverty at the macro level. By using penal least squares (PLS) and GMM. Swamy (2014) study financial inclusion, gender dimension and economic impact on poor households in India using cross-sectional and time series data. The study reveals that in general, women participation has increased household income by 16.23% on average in India. He also finds that gender matters in the impact of financial inclusion programmes for the poor. He notice that income growth (CAGR) net of inflation effect was 8.40% for women as against 3.97% for men, indicating that the gender participating poor undoubtedly affects the outcomes of financial inclusion programmes. His results, therefore, suggest that financial inclusion is important in poverty reduction for poor households in India.

3. Methodology

The data for this research were sourced from primary data. Primary data is a data source from questionnaires, interview, observations and so on. The essence of this choice is to give us depth research and get the highest accuracy of our study and avoid biased results. It 's difficult to study the entire population of the study area. The population is the total number of people living in a given geographical area. According, to 2006 census, Niger state has an estimated population of 3,954,772, due to the large population size. There is a need for us to make a sample population of our choice that will give us good representative.

Niger State has three senatorial districts such as zone A which is purely Nupe dominant, zone B comprises of Gwari, Hausa, and Nupe, and zone C is Hausa, Kamuku, Kamberi and so on. We employed stratified random sampling. Stratified random sampling is a method of sampling that involves the division of a population into smaller groups known as strata. In stratified random sampling or stratification, the strata are formed based on members' shared attributes or characteristics. Therefore, we strata it bases on zoning method (zone A, B, and C). Slovin formula is used to determine the sample size. The Slovin formula to obtain a small sample size for the study and the level of accuracy or confidence chosen is 92 and an error tolerance level is 8%. The Slovin formula is given as:

$n=N/1 + N(e)^2$

Where; n = sample size
N = population size
e = marginal error or level of significance

Hence; with N = 3,954,772 and e = 8% (0.08), n = 156.24 ≈ 156

Computation using the Slovin-formula thus gives the sample size of 156. Therefore, we partitioning the state into strata based on the three senatorial zones (Zone A, B, and C), then 52 individuals were randomly selected from each zone to fill the questionnaire.

Base on the nature of the research and the accuracy we intend to achieve. This study will employ multiple logit regression models using Eview to run our analysis. What prompts us to choose this model are as follows: first, the nature of the study requires a high and accurate method of analysis which the outcome could be used for policy making. Secondly, It aims at building a biologically acceptable model that can identify the relationship between dependent and independent variables in a way that will have the best suitability for use of the least variable. Thirdly, the flexible nature of logistic model does not have any assumption limitation. Fourthly, Logistic regression is that it is same as the other model building methods used in statistics.

Model Specification

Pov = f(finicl) 3.1

The equation 3.3.1 is the functional relationship between poverty and financial inclusion. Pov is poverty and finicl is financial inclusion. To further simplify our model to incorporate the financial inclusion indicators. We have this:

Finicl = f(foac, finadv, mpy, tpt, acfc) 3.2

Foac = formal ownership of account
Finadv = Financial advice
Mpy = mobile payment
Tpt = teller point
Acfc = access to formal credit
Pov = f(foac, finadv, mpy, tpt, acfc)

$Pov = a + b_1 foac + b_2 finadv + b_3 mpy + b_4 tpt + b_5 acfc + u$ 3.3

U = the Error term
a = constant
b_1 to b_5 = coefficient of the parameters

b_1 to $b_5 < 0$. This is the a priori expectation of the model

Formal Ownership of Account: we expected formal ownership of account should have an inverse relationship with poverty because if the poor have access to formal financial service the account could be used to engage in different business activities such as borrowing, savings, and investment which has strong potential to push them out of poverty. An account can be used to save money, to make or receive payments, to receive wages and remittances, and to borrow money from a formal financial institution (Jabir, 2015). Those with access to formal financial services take the binary value of 1 and 0 otherwise.

Financial Advice: The financial advice is expected to have a negative relationship with poverty. The financial adviser provides poor clients with financial advice in terms of investment, loan and can help with life insurance and business planning they need. This will go along making the life better for them through improved welfare. Those that have financial advice take the value of 1 and 0 otherwise.

Mobile Payment: This is the easiest, safest and fastest way of making transaction. It saves poor from the risk of cash lost or theft, saves time for other activities or it provides ways for multiple businesses and unnecessary business charges which increase revenue. The mobile payment is expected to have a strong hood of reducing poverty. Therefore, those that use phone transaction takes the value of 1, those that have a phone but do not use it for transaction 0, and not have a phone at all 2.

Teller Point: this is a new introduce cash withdraw, deposit, open account, bill payment, buy airtime, transfer fund, and others center available to low-income earners to ease access to finance at affordable and less stress to ease the doing of business and other financial challenges. The teller point is also expected to have a significant effect on reducing poverty because of it's financial proximity to poor clients. Those that patronize teller point 1 and 0 otherwise.

Savings: according to classical theory savings equal investment. That is, whatever an individual saves indirectly tdug back into the business. Here we are looking at the only proportion of those that have a formal account and saves money. There are those that have a formal account but do not save in their money. The expectation is that that the poor who saves money in their accounts should have a reducing poverty rate. This is because savings can help the poor to accumulate capital to undertake investment in any business venture. If an individual has saved within the last 12 month it takes the value of 1 and 0 otherwise.

Access to Formal Credit: one of the definitions of financial inclusion is access to formal credit. Borrowing has some effect on the poor who are financially included. Thus, it will help to make funds available to the poor who will intend invest those funds thereby getting them out of poverty. But the capacity or strength of borrowing depends on the interest rate charging, the lower the interest rate the higher the borrowing capacity vice verse. Therefore we expected an inverse relationship between the two. If an individual has access to formal credit in last 12 month and invests it takes the binary 1, access to formal credit in the last 12 month but does not invest it 2, and 0 does not have access to formal financial credit.

Poverty: poverty will be measured by the relative poverty perception. According to World Bank (2014), relative poverty is a condition in which people lack the minimum amount of income needed in order to maintain the average standard of living in the society in which they live. It is considered the easiest way to measure poverty in individual country. The poverty line of expending $1.90 a day will be used as a measure of poverty status of households to be studied. If the household is none – poor expend more or equal $1.90 takes 0 value, 1 if the household is poor expend less than $1.90.

Table 3.1; Dependent Variable: POV

Variable	Coefficient	z-statistics	Prob. (z-stat)	dy/dx (Marginal Effect)
Constant	3.610896	4.58	0.000*	-
FOAC	-2.518439	-4.07	0.000*	-0.5155679
FINADV	-1.380861	-2.39	0.017*	-0.3293198
MPY	1.267733	2.41	0.016*	0.3027838
TPT	-0.9570529	-1.91	0.056**	-0.2207114
ACFC	-3.88521	-5.83	0.000*	-0.7492602
Pseudo R^2 = 0.4855, Log Likelihood Ratio ^{2} = 103.48, Prob. >^{2} = 0.0000, _hat = 1.02(6.10), _hatsq = -0.044(-0.68)				

*Source: Author's Computation using Stata 13.0; * (**) – 1% (5%) level of significance*

The result of the binary Logistics regression model presented in Table 2 follows the empirical model of the impact of financial inclusion on poverty in Niger State stated in Equation (3.3) which the response (dependent) variable is based on the binary response or either being poor or non-poor based on the expenditure of below or above $1.90 daily. However, given the value of the Pseudo R^2 which is the measure of goodness of fit synonymous to the conventional R^2 as 0.49, indicates that about 49% variations in the response variables are been explained by the explanatory variables in the model. Furthermore, apart from the measure of goodness of fit, link test (_hatsq) and Log Likelihood Ratio (LR) as well shows the correctness and efficiency of the model specified and estimated.

From the empirical result in Table 2, the coefficient of the constant term which represents the value of the response variable when all the explanatory variables in a model are assumed fixed is positive and significant, indicating that when the indices or indicators of financial inclusion (formal ownership of account, financial advice, use of mobile payment, use of teller or ATM point and access to financial credit) are held constant, the log of the odds of poverty in Niger state tend to aggravate by 3.6.

The probability of the ownership of financial account by an individual shows a negative and significant influence on poverty in Niger state, indicating that account ownership is vital in poverty eradication. This, therefore, implies that for a unit increase or decrease in the probability of the ownership of the financial account, the log of the odds ratio of poverty will likely decrease or increase by 2.5. Although in reality, the ownership of financial account does not necessarily facilitate the alleviation of poverty, it is assumed that an individual will only save excess after making provision for consumption expenditure.

Given the importance of financial advice, the probability of an individual receiving financial advice or having a financial adviser is statistically significant on 1% level of significance in reducing poverty given the negative sign of the coefficient of financial adviser in the empirical result presented in Table 3.1, which thus denotes a negative relationship between poverty and financial advice. This, therefore, denotes that a percent change in the probability of an individual having a financial adviser tend to cause the log-odds of poverty to decrease by 1.4. Invariably, the probability of ownership of mobile phone or smart-phone that can facilitate financial transaction poses a significant and positive relationship with poverty in Niger state. Empirically, this indicates that for a percent increase in the probability of owning a smart-phone of mobile phone that can facilitate financial transaction will likely cause the log-odds of poverty to increase by 1.3. It then means owned a smartphone does not guarantee one to participate in a financial transaction.

Furthermore, the probability of patronizing teller point or ATM stand for financial services or transactions shows a statistically significant negative relationship with poverty. On average, a percent increase in the probability of patronizing teller point or ATM stand will likely cause the log of the odds of poverty to decrease by 1.

When formal credits are made accessible, available and affordable to individuals in a given locality, it tends to improve the living standard of the people. This as shown in the empirical result obtained with the probability of access to formal credit influencing poverty negatively and significantly. This denotes that for a percent increase in the probability of access to formal credit will likely cause the log-odds of poverty to decline by 3.9. And this indicator of financial inclusion (access to formal credit) is unarguably the most significant and most potent poverty reducing mechanism.

The result of logistic regression model presented in Table 3.1 also explains the marginal effect for each financial inclusion indicator in respect to its effect on poverty in Niger state. From the marginal effect in Table 3.1, increase in formal account ownership will cause poverty to decrease by 52%. Furthermore, changes in the probability of having a financial adviser, patronizing teller point or ATM point for financial services or transactions, and the access to formal credit will cause poverty to decrease by 33%, 22% and 75% respectively. As such, increases in the probability of using a mobile phone that can handle financial transaction tend to cause poverty to increase by 30%.

5. Conclusion and Recommendations

Theories and empirical evidence have suggested that financial inclusion leads to poverty reduction. The investigation revealed also that access to formal credit, financial adviser, teller point, and formal ownership of the account lead to an improvement in

the welfare of the people. Therefore, financial development can bring about a better life for people and the society which is one of the indices for development. The following are recommended base on the findings.

Regulation. The government should try by all means that everyone has an active formal account with the bank, just the way everyone is compelled to collect national identity card.

The government should also make a provision that will checkmate the activities of banks loan to an individual to avoid the tedious process and this should be done through central bank of Nigeria

The central bank of Nigeria should encourage the commercial banks to install ATM or teller point in strategies places both in the rural and urban area to allow people have easy access to their money.

The financial intermediary should have a customer advisory department aside from customer unit. The former is to advise the customer purely on important of financial services to improve their welfare and how they can give them working hand to improve a better standard of living. This can also be done through a promo and advertising because at the end of the day both again (bank and customer).

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The Impact of Women Empowerment Programme on Poverty Reduction in Bauchi State- Nigeria

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Abstract

This paper analyzed the Impact of Woman Empowerment Programme on Poverty Reduction in Bauchi State, Nigeria. The study relied on primary data, a total of 540 questionnaires was administered out of which 510 was returned and analyzed. An in-depth interview (IDI) which involved 15 men and 15 women, was also conducted to complement the survey instrument (questionnaire). Empirical and theoretical literature were reviewed, questionnaire and in-depth interview were used for data collection and the data were analysed using Statistical Package for Social Sciences (SPSS) software, the variables used are marital status, level of income and level of education. With regard to the findings of the study, evidence from data analyses show that the results of the study are supportive of the major assumptions made at the beginning of the study and also support some of the literature that were reviewed. The results of the study show that the higher the level of women empowerment, the lower the level of poverty in the state. The study concludes that women empowerment creates powerful influence on community, family and nation at large, it also revealed that income and education level have significant relationship with poverty reduction. The study recommends re-orientation of men's mind set on women's empowerment and participation could greatly enhance women's empowerment, also the empowering agents (Government, Non- Governmental Organisations, individuals) should create necessary awareness on the availability of the existing empowerment initiative so that women can take advantage of their initiatives to empower themselves.

Keywords: Women, Empowerment, Programme, Poverty Reduction.
JEL Codes: 138, B54

1. Introduction

Providing equal access to financial services, helping give women more power over income and assets like land and technology, and professionalizing the care giving-giving sector can help accelerate progress in women's economic empowerment, especially in developing countries (World Bank, Washington, June 26th, 2017). Time poverty for women is exacerbated then when there is a lack of infrastructure and technology that can provide basic necessity such as safe water, cooking fuel, labour-saving technologies, transportation as well as access to social and economic amenities such as markets, schools and health centres (USAID, 2015). Globally, it is not uncommon to hear of the need for women's participation towards sustainable economic development. For the past decade, the issue of women empowerment has moved to the forefront of international and national debates with the United Nations (UN) and other several international bodies calling for greater equality and opportunities for women (Population Reference Bureau, 2002). Women contribute substantially to the economic survival of their country's economy and to their households in particular. In most developing countries women are responsible for the day to day well-being of their families. According to the International Labour Organization (ILO) "Societies cannot afford to ignore the potentials of female labour in reducing poverty and the need to search for innovative ways of lowering economic, social and political barriers. Society's ability to accept new economic roles for women and the economy's ability to create decent jobs to accommodate them are the key prerequisites to improving labour market outcomes for women as well as for economic development as a whole (ILO, 2008)".

Therefore, there has been an increase in World Bank activities on gender issues concerning women empowerment. In 1991, the Bank committed about a third of all its investment projects on measures dealing with women issues (Murphy, 1995). Throughout Africa, women form part of the powerful force for growth and development by making enormous contributions to the economy as workers and entrepreneurs and to the welfare of their families (Ellis et al., 2007). Realising these important roles of women, the World Bank therefore, sponsored gender and economic roles studies in Uganda (2006), Tanzania (2007), and Kenya (2007) to assess the level of women incorporation into the economic spheres. Other agencies such as the International Federation of Women Lawyers (FIDA), Non-Governmental Organizations (NGOs) like World Vision International (WVI), Gender Activists, among others have all been advocating for the need to empower women to contribute towards economic development and the reduction of household poverty. Governments of various nations in which Nigeria and Bauchi state are inclusive, have made attempts to empower women to contribute economically to the growth of society and reduction of poverty. A nations population is usually almost divided between males and females excepts under peculiar circumstances such as war or highly selective immigration which normally affect males more than the females.

Though, there has been considerable progress in developing the capabilities of women, their participation in economic and political decision making remains very limited. The United Nations Development Programme (UNPD) in its Human Development Reports in 2005 listed some examples to show that inspite of the considerable progress in developing women's capabilities, women and men still live in an unequal world. Meanwhile, organization such as Federation of Muslim Women Association of Nigeria (FOMWAN), Women for Democracy and Leadership (WODE) and National Council for Women (NCW) were formed to sensitize women.

Problem Statement

Women most often face discrimination and persistent gender inequalities, while some women are experiencing multiple discrimination and exclusion because of factors such as ethnicity or caste. Unequal opportunities between women and men continue to hamper women's ability to lift themselves from poverty, and gain more options to improve their living standards. The discriminatory practices and stereotypical attitudes prevent women in some parts of Nigeria women are unable to obtain business loans without their husbands or father's co-signature and support. In many societies, existing norms dictate that girls and women have the main responsibility for the care of children, the elderly and the sick, as well as for running the household, including the provision of water and energy supplies. Many programmes have been put in place at local, state, national and international levels. These programmes and initiatives aim at widening women's access to education, encouraging women's full participation in cash economy and politics and reviewing laws on status of women. These initiatives are organized by both women themselves and governmental and non-governmental organizations and include the provision of micro-credit facilities, educational programmes, skill acquisition, political participation, and related activities. These programmes are evident in Bauchi.

Though some of these empowerment initiatives exist, the effectiveness of these initiatives in poverty reduction of Bauchi women has not been empirically examined and documented. This dearth of research has created the need for this study. This research therefore assessed the empowerment initiatives available to women in Bauchi and evaluate the role of these initiatives in reducing the poverty and identify the factors that limit empowerment.

Objectives of the Study

The general objectives is to access the impact of women empowerment on poverty reduction in Bauchi state, and specific objectives are:

i. To ascertain the contribution of economic empowerment of women to poverty reduction in Bauchi state.
ii. To identify factors responsible for women's poverty in the society.
iii. To make policy recommendation best on the findings of the research on how the women empowerment reduces poverty in Bauchi State.

This paper will also serve as a guide to women organization such as National Council for Women Societies (NCWS) Family Support Programme (FSP) Women for Democracy and Leadership

(WODEL) etc in reviving the status of womanhood. Poverty is a general phenomenon in the world. But this paper is limited to the empowerment of women in order to reduce poverty with particular reference to Bauchi State.

2. Literature Review and Theoretical Framework

Owing productive resources has been found to strengthen a woman's bargaining position in the household (Meier Zu Selhausen, 2016). Solomon (1976) defined empowerment as a process whereby individuals are made to engage in activities that aim at reducing the powerlessness that has been created through negative valuation based on membership in a stigmatized group. This theory is very important to this study because women as a group have been marginalized and are a stigmatized group in the society.

Women empowerment According to Stromquist (1995), women empowerment is a socio-political concept that involves cognitive, psychological, economic and political dimensions. The cognitive component involves women's understanding of the causes of their subordination and marginalization and appreciating the need to make choices that may go against cultural or social expectations. The psychological component refers to women's belief and confidence that they can improve their condition through personal and collective effort. The economic component refers to access to income outside home through work that provides income independence. The political component involves the ability to understand one's situation and mobilize for change.

Poverty: according to United Nations Development Program, around 2.7 billion people are considered to be living in poverty. These people have a consumption level of less than 2 US Dollars per day. Extreme poverty is defined as living in less than 1 US Dollar per day. Around 1.1 billion of the poor live in extreme poverty. *Poverty is a multi-dimensional phenomenon related to the inadequacy or lack of social, economic, cultural, and political entitlements. Poverty is hunger. 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 knowing how to read. Poverty is not having a job, is fear for the future and living a day at a time. Poverty is losing a child to illness brought about by unclean water. Poverty is powerlessness, lack of representation and freedom (World Bank, 2000).*

Women's economic empowerment is recognized as one means for reducing poverty and economic growth. Women play a significant role in Nigerian economy, and are highly visible in the micro and small enterprises sub-sector. The majority of them are engaged in small income generating self-employment in agriculture and non-agricultural activities with low prospect for growth (Dejene, 2014).

Zoellick, (2010) commenting on the Brazil's economy asserts that the likelihood of a child's survival increased by 20% when the mother controlled household income. Increasing the role of women in the economy is part of the solution to the financial and economic crises that are critical for economic resilience and growth. Higher female financial earnings and bargaining power translate into greater investment in children's education, health and nutrition, which leads to economic growth in the long term (DFID, 2010). Economic empowerment also contributes to the reduction of gender-based violence, increases women's family-planning possibilities and slows the spread of HIV.

Theoretical and Empirical Framework
Classical theory, attention was concentrated on the aggregate distribution of profits, rent and wages. Ricardo, for example, described the principal problem of political economy as the division of the earth‟s produce „among three classes, namely; the proprietor of the land, the owner of the stock or capital necessary for its cultivation, and the labourers by whose industry it is cultivate‟. Little or no attention was devoted to the explanation of the distribution of personal incomes and the relationship between personal incomes and aggregate shares of profits, rents and wages. However classical economists that came later began to give increasing attention to inequality in the distribution of earnings and then what happens to factors affecting individual earnings rather than family incomes in explaining inequality. This theory underpins the study.

Owing productive resources has been found to strengthen a woman's bargaining position in the household (Meier Zu Selhausen, 2016). Several studies including Batliwala (1994); Acharya and Bennett (1983) Kabeer (2001); and Frankenberg and Thomas (2001) have identified some determinants

of women empowerment. A study in rural Zimbabwe by Batliwala (1994) found that among the factors that increase the likelihood of women using contraception and accessing anti-natal care both of which reduces maternal mortality-were education and paid work. The analysis of the finding shows that women with low level of education were less likely to visit anti-natal facilities. A similar study was conducted by the international development research (2006) in rural Nigeria. The findings showed that 96% of those with secondary and higher education, 53% of those with primary education and 47% of those with little or no education had sought postnatal care in the two years before the study. A study in India found that better educated women score higher than less educated women on composite index measuring their access to control over resources as well as their role in economic decision making.

Another study undertaken in Bangladesh found that with rising unemployment, many women become primary bread winners, slightly altering the balance of power between the genders. Similarly, a detailed study of women engaged in industrial home work in Mexico City noted that, particularly in household survival, women had been able to negotiate a greater degree of respect. Studies of micro credit in rural Bangladesh, by Zaman (1999), found that women's access to credit led to a number of changes in women's own perception of themselves and their role in household decision-making. It was found to have positive impact on women's assets as well as led to a long-term reduction in domestic violence.

Similar work by Amin and Pebbly (1994) measures the impact of programme participation on identified women status indicators in Bangladesh. They obtained qualitative information by means of focus groin discussions and semi-structured interviews and applied multiple logistic regressions to estimate the impact of group membership and programme effects. The indicators used to see the influence of credit to women include control over part of household's cash earnings participation in household's decision-making.

3. Methodology

The research adopted a cross-sectional survey design. The survey research method according to Stark (2004) has two identifying features. First, it is based on a sample of the population. Second, the data are collected by personal interviews or by having each individual complete a questionnaire. The researcher obtained cross sectional data from the respondents by means of questionnaire and In – Depth Interviews (IDIs).

The study was carried out in Bauchi, a city in northeastern Nigeria, the capital of Bauchi State, of the Bauchi Local Government Area within that State, and of the traditional Bauchi Emirate. It is located on the northern edge of the Jos Plateau, at an elevation of 616 m. The Bauchi state covers an area of 49,119 km^2 and had a population of 4,653,066 at the time of the 2006 Census. Bauchi state is bounded by Gombe state, Yobe state,& Jigawa state, Most of the women rely on petty trading for their daily upkeep. The population of the study comprised of adult males and females in Bauchi state from the age of 18 and above. The sample was drawn from three senatorial zones (Bauchi South, Bauchi north and Bauchi central). The population of Bauchi state women is estimated at 2,460,392, while the total population is estimated at 4,653,066 (National Population Commission, 2006).The sample that chosen for the study. Fifteen local government were selected from Bauchi state. Bauchi south, Bauchi North and Bauchi central 5 LGAs were were selected in each zone. In each of the local government selected, 34 women were selected. Making a total of 510 women for the questionnaire survey. Considering the nature of the present study, Men were included in the In-Depth Interview survey. This is to enable the researcher obtain the views of men on the issues in the study. Thus, five men and five women were selected from each zone making 15 men and 15 women, a total of 30 people for the In-depth Interview. This gave at total of 540 respondents for the study.

Multi stage sampling technique was used to select the sample. These include cluster sampling, simple random sampling, and availability sampling. Purposive sampling was also used in the sampling procedure. All the areas in Bauchi state were grouped into three clusters, representing the Bauchi state. After grouping them into clusters, the researcher conducted a simple random sampling (balloting) to select the fifteen local government to be studied in Bauchi state. In the 15 selected local government, the houses were numbered and another simple random sampling was conducted to enable the researcher select the households that will

represent the local government. Ten (17) households were selected in each of the local government and in each household two women were picked for the study. The reason for choosing random sampling for this study is to ensure that all the local government in Bauchi state were equally represented and also to give every local government an equal chance of being selected for the study in order to reduce biases (Stark, 2004). There were cases where there was only one woman who was up to 18 years in the household selected. In cases like this, what the researcher did was to select another woman from another household which did not fall into the sample to make up the number required. Purposive sampling procedure was also used to select 15 men and 15 women who are opinion leaders, women leaders and the significant orders in the areas. Who have certain qualities and can provide information on the subject area. These are the people who were studied using in depth interviews. Questionnaire the copies of the questionnaire were administered to 540 women aged 18 and above in Bauchi state surveyed. The In-depth Interview guide was used to obtain data from the purposively selected 30 men and 45 women who are opinion leaders, women leaders, and the significant others in Bauchi state. Data collected with the instrument were edited to ensure accuracy. The quantitative data were analyzed using Statistical Package for the Social Sciences (SPSS) software. Statistical means such as percentages, bar chart, pie chart and frequency tables were used to reduce the raw data into manageable proportions. Analysis of qualitative data was done using notes taken during the interviews and transcription from tapes recorded during the interviews. The tapes were transcribed verbatim. Those recorded in local dialect were translated into English language. Key points were identified and were categorized and coded, reflecting the various themes in the study. The results were then analyzed according to the themes in the study. Statements with contextual importance or connotations were extracted as illustrative quotes to complement the quantitative date.

4. Discussion of Results

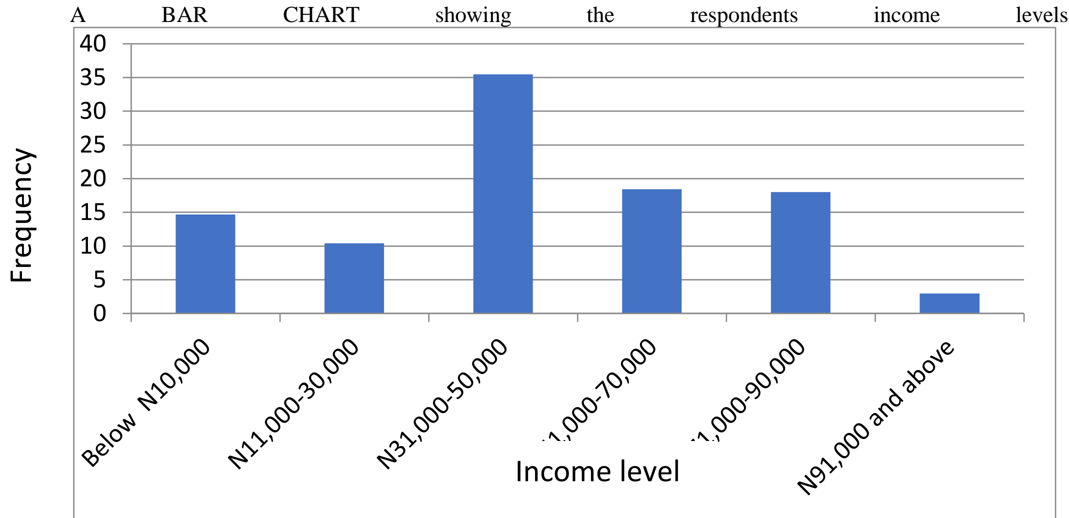
Demographic Characteristics of Questionnaire respondents

Marital Status: the study shows that majority of the women who participated in the study were married representing 79.80% of the sample. Out of the 510 participants, 57 (11.18%) were single, 34 (6.67%) were widows while 12 (2.35%) were divorced or separated.

With regard to the participants' ages, 106 (20.78%) of the respondents fall between the age bracket of 18 and 27, while 139 (27.25%) are between the ages of 28 and 37. One hundred and forty two (27.84%) were in the 38-47 age bracket, 103 (20.19%) were between the ages of 48 and 57 while 20 (3.92%) are 58 years and above.

The educational qualification shows, 75 (14.7%) of the respondents had no formal education, 33 (6.5%) had first leaving certificate, 201 (39.4% had secondary school certificate, and 90 had Ordinary National Diploma (OND) or National Certificate in Education (NCE), 92 (18%) had university degree or Higher National Diploma (HND), while 19 of the participants had higher degrees.

A BAR CHART showing the respondents income levels



Source: researcher's field survey (2017)

Respondents indications of existence of Empowerment Initiatives in Bauchi State.

In responding to the question: Are there empowerment initiatives for women in Bauchi State? All the participants agreed that there is one form of empowerment initiative or the other in their local government. With regard to the results of the IDIs, all the respondents who were interviewed also agree that there exist some empowerment initiatives in Bauchi State.

Respondents frequency report on the availability of empowerment initiatives available for women in Bauchi state. In the questionnaire, participants were asked to indicate the availability of several empowerment initiatives for Bauchi state women. The respondents were asked to tick as many as possible, the initiatives they have benefited from. The results of their responses as indicated, shows that the most available initiative in the town is the existence of women organizations with 403 participants indicating their availability. Frequency of the respondents on the availability of other initiatives follows in this order: cooperative societies, right to use land and other cash crops, provision of agricultural facilities, micro credit programme, awareness programme, adult literacy programme, child day care services, political parties, access to skill and capacity building centres, and the last in the list based on frequency is free education. All the interviewees also indicated that the above listed empowerment initiatives are available. The initiatives that the women have benefited from are further explained.

Participants' responses on who organizes the empowerment initiatives

Participants' responses on who organizes the empowerment initiatives. 215 (42.16%) respondents indicated that the initiatives are organized by governmental bodies, 37.06% (189 respondents) indicated that initiatives are organized by non-governmental organizations while 106 (20.78%) indicated that they are organized by individuals.

Majority of the participants who were interviewed agreed that some of the empowerment initiatives were organized by the government, others were organized by non-governmental organizations while others are organized by individuals. According to one of the IDI respondents: *"Some initiatives like provision of agricultural facilities, adult literacy programme, free education, micro-credit programme are organized or facilitated by the government while others like cooperative society, women's community organizations, skill and capacity building centres, child day care services are organized mainly by non-governmental organizations and women themselves. (IDI*

Respondent: Women Leader in Das LGA; 52 yrs). Another participant said: *"Some women are given right to use land and cash crops for agricultural purposes on temporary basis by an individual or a particular family. Some individuals also lend credit to women. This means that individuals also provide credit facilities". (IDI Respondent: Opinion Leader, Toro LGA; 54 yrs).*

Respondents' rating of women's involvement in empowerment initiatives in Bauchi State

448 (87.84%) of the respondents rated women's involvement in the empowerment initiative low while 62 (12.16%) rated women's involvement high. Also, all the IDI participants agreed that women's involvement in empowerment initiatives in Bauchi is low. Reasons given by the respondents for this low involvement is: *Respondents' indications of major causes of women's low involvement in empowerment initiatives*

With regard to the reasons for the low involvement of women in existing empowerment initiatives, 429 respondents rated ignorance of the existence of the initiatives (429 respondents) as the major reason. This was followed by restrictions from husbands and other relations (236 respondents indicated this as a major reason).(236) respondents indicated that lack of interest on the part of women was the major reason for such low involvement while 98 respondents attributed low involvement to women's lack of willingness to take advantage of the empowerment initiatives.

Most of the women respondents in the IDI indicated that restriction from husbands and other relations; and women's lack of will power to take advantage of the initiatives were the major reasons for women's low involvement in these initiatives. Few other women and majority of the men were of the view that some women are ignorant of the existence of the initiatives while some of the respondents indicated that some women do not have interest in taking advantage of the existing initiatives.According to a participant: *"I know that banks give loans to women, but I am not a salaried worker and I have nothing to use as collateral for the banks to give me a loan and because of that, I have never secured any bank loan". (IDI Respondent: Leader of a wives association in Kirfi LGA 63 years).* Another IDI respondent said: *"I have asked many of my friends who didn't have the opportunity to attend schools to start attending adult literacy programmes in the place where I teach but they refused saying that their husbands said they shouldn't start because they are not going to do anything with the education at their age". IDI Respondent: A teacher in Adult Literacy Programme at Bauchi LGA; 45 yrs).This achieve the objective of the factors responsible for women's poverty in Bauchi state.*

Participants' responses on how they have been economically empowered

With regard to the level of economic empowerment of the respondents, 369 of the participants indicated that they have access to land and cash crops, 354 indicated that they have been involved in cooperative societies, while 180 indicated that they have been provided with agricultural production facilities. Among the 510 participants surveyed, 162 indicated that they have access to micro credit facilities while 56 indicated that they have benefited from skill/technical training.

Majority of the IDI participants indicated that most women in Bauchi have been empowered through access to land and cash crops and involvement in production activities. They also indicated that only women who are salaried workers and women who have the opportunity to borrow from individuals that usually take advantage of micro credit facilities. Quotes on the economic empowerment initiatives that have benefited women as expressed by the IDI respondents are as follows: *"Majority of women in this LGA have made a lot of money from the cultivation and egg selling." IDI respondent: opinion leader* in *Zaki LGA; 57 yrs).*

"Majority of women belong to corporative societies and through that they have benefited from government subsidized agricultural facilities such as fertilizers and herbicides". (IDI participant, Opinion Leader, in Zaki LGA: 62 years).

Participants' responses on categories of women who benefit most from these empowerment initiatives

With regard to the categories of women who benefit most from the empowerment initiatives, shows that 242 (47.45%) indicated that women who are related to individuals occupying political offices are the major beneficiaries of the empowerment initiatives, 110 (21.57%) indicated that women leaders benefit most, 81 (15.88%) respondents indicated that women who are civil servants benefit most while 77 (15.10%) respondents listed poor village women as

the major beneficiaries.There were slight differences in the response of IDI participants as majority of the participants indicated that women leaders and civil servants benefit more from the initiatives than other women. According to an IDI participant: *"Women who are civil servants benefit more from micro credit programme because they use their salary as collateral. (IDI respondent, civil servant, Bachi LGA 49 years).*

4.1 Table 1 showing participants' level of participation in economic development activities

	Very Great extent	Great extent	Little extent	Not at all	Total Score	Mean Score	Rank
Getting involved in Agricultural production activities	1112	486	98	21	1693	3.32	1st
Giving technical/skill training to people	84	129	142	375	730	1.43	3rd
Giving people loan to start up their business	48	120	138	389	695	1.36	5th
Setting up business to employ others	160	222	216	288	886	1.74	2nd
Creating awareness on the availability of micro credit facilities	56	183	154	358	751	1.47	4th

Source: Researcher's field survey (2017)

The results in Table 1 above show that the economic development activity that the respondents have participated most is getting involved in agricultural production activities. This is followed by setting up of business to employ others, and giving technical and skill training to people. The least economic activity that the respondents have participated in is giving people loan to start their businesses.

With regard to the responses of the IDI participants, majority of the participants indicated that Bauchi women have been actively involved in agricultural production activities. LGAs that the respondents indicated that women have been actively involved include cultivation, egg, poultry farming, and other food processing activities such as groundnut oil processing.

Participants' responses on if women's level of participation in development processes is low

participants' responses on successful empowerment of women in the community. Out of the 510 respondents 326 (63.92%) stated that women have not been successfully empowered while 184 (36.08%) indicated that women have been successfully empowered. All the IDI participants agreed that women have not been successfully empowered and this has led to their low participation in development process.

The result in Table 2 above shows the frequencies of the participants' responses on the factors that limits women's participation in development processes in Bauchi State.

Among the major problems indicated by the participants is lack of time due to domestic and reproductive roles of women (427). This was followed by the discriminatory attitude of men (408).

4.2 Table 2 showing frequency of participants' responses on the factors that have contributed to low empowerment and participation of Bauchi State women in development process

Militating Factors	Frequency	Rank
Lack of time due to domestic and reproductive role of women	427	1
Discriminatory attitude of men	408	2
Illiteracy	331	3
Poor economic base	313	4
Lack of group coalition among women	296	5
Patriarchy	252	6
Lack of efficient and trustworthy women leaders	204	7

Militating Factors	Frequency	Rank
Lack of sustained process of empowerment	167	8
Religious belief	64	10
Lack of assertiveness among women	12	11

Souce: Researcher's field survey(2017)

Out of the 510 women surveyed, 331 indicated that illiteracy is a major limiting factor while 313 listed poor economic base of women as a major factor. Other limiting factors listed in order of ranking by the participants include, lack of group coalition among women, patriarchy, lack of efficient and trustworthy women leaders, lack of sustained process of empowerment, rivalry among women, religious belief, and lack of assertiveness among women. The IDI participants further indicated that women's low level of participation could be attributed to poor economic base, burden of domestic and reproductive roles of women and illiteracy. Majority of the female respondents in the IDI also included discriminatory attitude of men as a contributing to low level of participation of women in development processes.

The result illustrates the importance of women empowerment on poverty reduction. This is consistent with Rahman and Naoroze (2007) findings that economic independence makes women to become self-reliant and this led to the reduction of poverty.

5. Conclusion and Recommendation

Conclusion

Women can be described as an indispensable group in the development of any nation. Women's empowerment creates a powerful influence on community, family and the nation at large. Thus, women empowerment can be seen as a vital strategy for any eradication of poverty. Although some initiatives have been established by government, nongovernmental bodies and individual, some factors have constituted constraints to women's involvement in these initiatives. Ignorance of the existence of these initiatives, lack of interest among women and restriction from husbands and other males have denied women access to these initiatives. The study revealed that income level and educational level have significant relationships with poverty reduction. This supports the view of Lasiele (1999) that preference to boy child education has to low educational empowerment of women which has led to their poor participation in development process. Thus, to help reducing poverty in Bauchi state, they should be empowered women economically. The study also reveals that women's participation in development is still low. There is need for government, non-governmental bodies and individuals to work hand in hand in eliminating or reducing these constraints in order to create a conducive environment for women to actively participate in the development process in order to reduce poverty. This will lead to sustainable development in Nigeria.

Recommendations

Based on the findings of this study, the following recommendations were made:

The National gender policy should be enacted into laws to provide a legal framework for gender mainstreaming in the national development plans and strategies.

There should be coalition among women organizations and groups. This will help them share experiences and be able to tackle problems facing women. Women groups could be used as an effective mechanism for information dissemination, social and mutual learning, institutionalized process for capacity building and empowerment.

Re-orientation of men's mind set on women's empowerment and participation could greatly enhance women's empowerment. This could be achieved through seminars, training and workshops. Women should be given unlimited access to education and media. Through these, women will come to realize the scopes and opportunities through which they can improve their status in the society.

The empowering agents (e.g. governments, non-governmental bodies, individuals) should create necessary awareness on the availability of the existing empowerment initiatives so that women can take advantage of these initiatives to empower themselves.

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People's Democratic Party's Hegemony in Nigeria Political System; 2015 General Elections: A Benchmark of Turning Point

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Abstract

This paper is to critically assess the 2015 general elections in Nigeria as a benchmark of turning point in the electoral history of Fourth Republic and to examine the circumstances that surrounded the outcome of the election results. The results of the election was differ from all the previous election conducted in Nigeria (1999-2011) where People Democratic Party (PDP) was always declared winner. The paper identified the factors that determine the outcome of the election results and the reasons for political continuity of People's Democratic Party (PDP) for good sixteen years without any political interruption, and the benchmark of turning point in the electoral trend in 2015 in Nigeria. The paper employed purely qualitative method of sourcing data. The study found out that the election's results were a clear departure from what it used to be in the past. This study concludes that the results of the elections indeed reflect the will of the electorates and the political behaviour or voting pattern indicated without any ambiguity that majorities of the people's preference for "CHANGE" cannot be credibly disputed. Base on the finding, the paper recommends that the political actors should play politics with its virtues and that impunity and imposition of candidates should be eradicated in politics.

Keywords: Election, Political Party, Malpractices, Parties Merger and Insurgency.
JEL Codes: P48

1. Introduction

There is no doubt that election has been a factor in democratic government and since 1999 till date when Nigeria switch on to democratic system, election has been a factor in Nigeria' political development (Olaoye 2007: 64). Even in the first and second Republic, election played significant roles in the selection of leaders for elective post both at national and the states levels. But the fact remains that all the elections conducted in different phases of Nigeria Republic have a unique features that led to Election Petition Tribunal. These malpractices have gone a long way in affecting the quality of Nigeria political behaviour (Lawal 2003:129-130).

Since Fourth Republic (1999-2015), all the general elections conducted so far in Nigeria have been characterized by an array of problems. Such problems manifested, are the evidences of election cases at the Election Petition Tribunal in 1999, 2003, 2007, and 2011 general elections. Since 1999 to 2015, People Democratic Party (PDP) was the dominant political party that maintained its hegemony for sixteen good years in all the general elections conducted in Nigeria. There is no doubt that PDP hegemony was ensured by its electoral strength and geographical spread in the country.

The 2015 general election in Nigeria was therefore a benchmark of turning point, a clear departure from the historical continuity of voting pattern in Nigeria. There was a significant change in voting behaviour which demonstrated a reverse of the past experiences. PDP in 1999, 2003, 2007and 2011 general elections, always won, and had electoral victories in Nigeria presidential elections. The abrupt change and perhaps, the new direction to All Progressive Congress (APC) make the assessment of the 2015 general election in Nigeria inevitable. It is on this note that this paper examines the factors that sustained PDP hegemony in Nigeria political system and the determinants of the outcome of the election result at the turning point in the electoral trend in 2015 general elections in Nigeria.

2. Literature Review and Theoretical Framework

Theoretical Framework

The theory adopted in this paper is base on game theory. The choice of this theory is justified base on its suitability to help understand the subject of inquiry. Game theory is the study of mathematical models of negotiation, conflict and cooperation between individuals, organization and government. It is use in area of study to understand why individual makes a particular decision and how that decision made by individual affect others. It is use to find optimal outcome from a set of choices by analyzing the cost and benefits to each independent party as they compete with each other. It is best exemplify in hypothetical situation call prisoner's dilemma where prisoners only have two possible action or option.

The study aligns itself to this theory on the ground that election is a game which serves as a model of interactive situation among rational players in which options are left for electorates to choose from set of choices by analyzing the cost and benefits. And why individuals have made such decision to determine the winner among the competing political parties and the effect of such decision. The most likely outcome is that electorates will make a choice among competing political parties like prisoner's dilemma. Finally, the electorates made a choice by showing preference to All Progressive Congress (APC). These are what this paper is out to examine.

Literature Review

Election Practices before Fourth Republic and in the Fourth Republic

Elections are not just election; they are part of process, it determines leadership either continuity or change in this leadership (Timoth D. S. 2017:3). It is evident that election becomes a pivotal in any democratic selection of leadership. The election of first and second Republic in Nigeria political system, demonstrated all form of irregularities and malpractices like; rigging, stuffing of election result, falsification, burning of houses, destruction of lives by political actors etc. This position was captured by Joseph R. (1991: 171) that political culture of electoral behaviour is appropriately for a long time being as Nigeria as pounded yam or millet. These and others triggered military to topple the government till Fourth Republic when they decided to return Nigeria to civil rule.

In this Fourth Republic, elections have been conducted in different phases and proven to be worst with obvious irregularities that were witness at almost stages of electoral process. Indeed, the evidence of irregularity can be seen in the effort of the judiciary in the nullifying outrightly some elections and removing some of the governors (Isa A. M and Lawal A O.2012:34-35). This implies that elections generally in Nigeria remain the usual features of malpractices.

PDP in the Political System of Nigeria

Political party is a central key to democratic governance particularly Africa that faces the challenge of democratic sustainability. PDP is one of its kinds in Nigeria political system in this Fourth Republic. Hofmeister W. and Grabow K. (2011) defined political parties as a special form of social organization. It appears that this definition is too narrow as it does not capture the purpose of social organization. Meanwhile, political parties involve permanent and temporal association of citizens that is based on free membership in order to occupy a political position through election. For this to come to pass, it means there must be political competition among two or three political parties in election. Maclver R.(1963:396), define political parties as association being organized to support some principle and policy which by constitutional means it endeavour to make the determinant of government. Maclver capture the purpose of political parties as to acquire governmental power.

PDP was the political party that ruled Nigeria from 1999 to 2015, is the most fluctuating and crises-ridden political party with factions and unconnected aggrandizement of personal interest. The testament of crises ridden the party can be seen in the persistent changing of its national chairman intermittently. Between 1999 to 2015, the party was managed by not less than Twelve (12) national chairmen in which all left office with altercation or controversial circumstances.

PDP National Chairmen from 1998 to 2015 according to Saawua T. (2018)

Dr E kwueme ……………….. 1998
Solomon Lar………………… 1999
Chief Barnabas Gemade …… 1999
Chief Audu Ogbeh………… 2001
Col. Adamu Ali……………… 2005
Vicent Ogbulafor…………… 2008
Okwesile Nwodo…………… 2010

Haliru Muhammed………… 2010
Kawu Baraje ……………… 2011
Bamaga Tukur……………… 2012
Adamu Muazu……………… 2014
Uche Secondus…………… 2015

This is an indication of low internal cohesion within PDP in this Fourth Republic. However, despite these internal challenges within this party, they were still coherent and logical in terms of securing, acquiring and guarding their political power for several years. The emergent of PDP as ruling party in 1999 in Nigeria gave them edge to be logical in employing political tactics to retain the state power for good sixteen years. In all presidential elections conducted in Nigeria Fourth Republic, 1999, 2003, 2007 and 2011, PDP won all except that of 2015 general elections which was a benchmark of turning point in Nigeria political system where PDP was put on the toga of opposition and a new political party called All Progressive Congress (APC) emerged to receive the mandate of leadership.

3. Methodology

The paper employed qualitative method of sourcing data. The study made used of secondary data which involved textbooks, internet, journals and the news paper. The descriptive method is used to analyse the data sourced.

4. The Reasons for PDP Long Time Hegemony

Since 1999 till 2015, PDP sustained its hegemony and its electoral victory at national level in Nigeria particularly the presidency. There are certain factors that underpinned the long time hegemony of PDP in Nigeria, among others are:

Weak Opposition Parties: These are the parties that are defeated in the election, that come together to form opposition to the party that is ruling. Those parties became weak when the needed requirements to challenge the hegemonic power of the ruling party are lacking. The structure of the party, funding system, ideology and the leadership of the party determines its existence and its ability to serve as a strong challenger (opposition).

In a democratic society like Nigeria, strong opposition is needed to challenge the domineering power of the ruling party. No wonder Dr. Nnamdi Azikwe opined that democracy becomes sham in the absent of strong opposition (Dairo 2004:83). This revealed to us the extent to which strong opposition is important in the democratic government.

The most killing factor that renders political party impotent is Defection. When people decamp to the ruling party, it will directly or indirectly weaken the party they left and make the party they decamped to stronger. The weakness of such party cannot make it stand as strong opposition against the party (ruling party) that received more popular defectors. Opposition parties lose their potency as a result of political prostitution, and for democratic sustainability, strong and viable opposition is needed (Bratton and De Walle. 1997:248).

Bratton was of the opinion that if there are strong oppositions who could challenge the potency of the ruling party, the sustenance of democracy would be guaranteed. But the reverse is the case. Opposition parties are weak in Nigeria due to the incessant defection from growing political parties to the developed and ruling party. This can said to be an indicator that sustained the hegemonic power of the PDP for good Sixteen years without any interruption and there was no opposition party strong enough to challenge PDP's overbearing power until 2015 when All Progressive Congress (APC) subdued the PDP's hegemony.

Electoral Malpractices: Electoral malpractices are illegal act committed with corrupt, fraudulent or sinister intention to influence an election in favour of a candidate or party (Ologbenla 2003:97). Electoral malpractices can invalidate the result of an election, and these are carried out in various ways such as; undue influence of election officers with a view to gaining advantages over other candidates or parties, stuffing of ballot boxes, underaged and multiple voting, voting by non-registered individuals and falsification of results etc. All these are collectively call rigging. Rigging in an election has had long histories in Nigeria, and it has been argued that there has hardly been any election conducted in the country that has not been tainted by one manipulation or the other. Therefore, rigging became properly integrated into Nigeria's politics and electoral lives in all phases of the Republic, and it has remained a permanent features of election in Nigeria (Edoh 2003:71).

In this fourth republic, the elections that transcended into democracy and civilian to civilian transition in Nigeria have never been known to be credible and honest (Braithwaite 2012:14). The second, third, fourth tenures of the current democratic experiment in this fourth republic have not yet divorced from

the usual manipulation of the past (Muhamed in Hassan and etal, 2006:207). Nwabueze (2007:199-220),and Kehinde in Omotoso(2007:113), all agreed and concluded that the democratic experiment in this fourth republic was characterized with array of problems, ranging from Electoral malpractices, falsification of election result, stuffing of ballot boxes etc. They opined that the illegality of the INEC appears to be a compromised set up, serving the interest of the ruling party.

The evidences of Electoral malpractices and the gross ineptitude of Independent National Electoral Commission (INEC) manifested in the series of upturned election result by the Election Tribunal. And there has not been any general elections conducted in Nigeria since 1999 till 2011 that have not involved petitions to Election Petition Tribunal except 2015 general election that received popular acceptance.

On this note, People's Democratic Party relied so much on amoral principle to sustain their hegemonic power. It is on this philosophy of Nicholo Machiavelli that pioneer president of fourth republic asserts that "we fight, and sometimes shed blood to achieve and retain political power because for us in Nigeria, the political kingdom has for too long been the gateway to the economic kingdom" (Obasanjo 2002:50-51). The foregoing statement demonstrates how PDP solely depends on amoral and Machiavellian principle to maintain their continuity in power. Conclusively, this will be one of those factors that sustain PDP long time hegemony.

Factors That Determine the Outcome of the Election Result

A lot of factors were responsible for the new voting pattern and the general outcome of the 2015 general elections. These factors serve as basic reasons why the wining party won and for the abrupt change in the electoral behaviour of the electorates. Among other factors are:

Political Parties' Merger: party merger is a process or act of merging two or more political parties together into a single entity to form one formidable political party. The major reason for parties' merger is to be strong enough to challenge the ruling party. Towards the end of the 2011 administration when brainstorming session began within the multi-opposition parties on how they could pull down PDP from the leadership of the country they quickly identified one of the strongest political tactics that strengthen the continuity of PDP in Nigeria which was proliferation of multi-parties (Interview). This has not allowed opposition parties to be strong enough because, about different political parties will be agitating for central seat. An attempt to put an end to this political trick, party's merger came on board.

The marriage existed between Action Congress of Nigeria (ACN), Congress for Progressive Change (CPC), All Progressive Grand Alliance (APGA), and All Nigeria People's Party (ANPP) to form new party, and it metamorphosed into All Progressive Congress (APC). This merger has underpinned and fortified APC party to be able to challenge the continuity of PDP which produced victory to APC at last.

Problem of Internal Democracy **:** What makes people to join or remain in certain political party is the coherent ideology which they believe so much like observance of internal democracy, and any attempt to change it either by any means or by leadership introspective tendency, may curtain further people to join such political party and as well trigger most of the members of such political party to shift ground from such party to another party where they think internal democracy could be observed or respected,

Decamping becomes inevitable for politicians in a political party where introspection becomes the other of the day. This could be traced to PDP toward the end of 2015 administration, where a lot of political figures and macho of politics defected from PDP to APC. (News watch Dec. 20, 2014). Violation of the principle of internal democracy in PDP caused a lot to decamp to APC and weaken the potency of the party and, when the rain of election came, in 2015, the ship of the party (PDP) sank into Atlantic Ocean like "Titanic" on April 14, 1912.

Leadership Problems within PDP/Internal Crisis: The internal crisis engendered by leadership problem started under the leadership of Bamaga Tukur as the National Chairman of PDP and the gross ineptitude of Tukur's leadership manifested in the creation of "G7" governors fashion out from PDP governors forum. A lot of factors could cause this leadership problem but one obvious bone of contention was the insinuation that Bamaga Tukur was working for the ex-president Goodluck Jonathan to sustain the mandate. This crisis between G7 Governors and the PDP was responsible for up

to five of them dumping the party to APC. (Tribune Jan. 29, 2014, the Punch Jan. 30, 2014).

The array of problem of internal crisis within PDP continued to rock the party. Even when Bamaga Tukur had been forced to resign as PDP chairman, ranging from imposition of candidates, problem of internal democracy, hijacking the ticket to contest the senate by some governors, the activities of National Working Committee (NWC) of the party appear to be subjective and introspective, and constraining some people to contest against ex-president Goodluck Jonathan at presidential primary election. With all these, when the crisis within the party became stronger and the center can no longer hold, things fall apart (Achebe C. 1994). By implication, a lot of people that matters in the party (PDP) dumped the party to APC and even those that are political king that did not decamp, they work against the party to ensure that PDP and Goodluck Jonathan lost the election and that was the end of PDP as a ruling party.

Political Will: One of the beautiful virtues that gave birth to the outcome of the 2015 general election is the political will of the ex-president Goodluck Jonathan and the Chairman of Independent National Electoral Commission.

The pioneer president of the Fourth Republic in Nigeria, Chief Olusegun Obasanjo had created a precedent for future presidents to be crooked on how to use federal might and amoral principle to influence the INEC Boss and have their way in electoral matter, Goodluck Jonathan did not consider this as alternative option for his victory, he rather conceived political will that will bring democratic sustainability. 2015 general elections remain the only election in this fourth republic that received popular acceptance without a case initiated in court.

More also, in this fourth republic, several elections have been conducted in which the INEC chairman became puppet and stooge in the hand of the president of Nigeria during elections, but in the case of INEC chairman, Atairu Jaga, who conducted 2015 general elections, he refused to relinquish his independent stand and was not ready to supplant his integrity for any materialism. In a nutshell, the Political Will of high pedigree and impeccable character from the above two actors can be said to have determined the outcome of the election.

The Use of Card Reader in the Conduct of Election: This is a scientific method introduced in Nigeria political system by Independent National Electoral Commission (INEC). This was used purposely to detect the ghost voters and to reduce electoral malpractices. The issue of card reader machine has effectively reduced to the minimum level fictitious voters, stuffing of ballot boxes and falsification of election result. This is because the machine has the record of every political units, the accredited voters and who actually voted. The evidences can be seen in some polling stations where about eight hundred to one thousand voters registered fictitiously and when it was time for voting, only eighty or one hundred voters appear at the polling unit to vote. Meanwhile there was political turn out from the electorates in 2015 general election (presidency) because everybody demanded "change" yet some registered names could not come out to vote. These nonexistent registered personalities are referred to as ghost voters and are intended to serve as one of the means of electoral malpractices.

Card reader machines have created a platform where the result of the election reflect the will of electorates unlike previous elections where "ghosts" will cast vote, and announcement of the election will be made base on the voting made by the electorates and ghost. Therefore, the machines have contributed in determining the outcome of the election since it reflects the will of the majorities. Although, the machine is not hundred percent perfect but it appears to be 70% effective in curtailing election malpractices.

Insurgency (Boko Haram) and the Issue of Chibock Schoolgirls: The activities of Islamic sect called Boko Haram in the North East greatly contributed to the failure of ex-president Goodluck Jonathan and the PDP. Boko Haram is a clandestine group who pursue their causes through the use of terror. They often cause wanton destruction of life and properties and inflicting of immense suffering on their victims. Their activities includes: bombing, sabotage, assassinations, displacing people, intrusion into comfort zone of a region and kidnapping. This group is a religion fundamentalist. It was the continuation of their violence and illegal act that led to the abduction of about 234 chibock schoolgirls in a school at Borno State.

The numbers of victims and causalities of Boko Haram in Nigeria have increased in such a way that

it tainted the administration of PDP and ex-president Goodluck Jonathan both at national and international level with gross ineptitude and incompetence to provide security to the citizens. On this ground, majorities shifted their interest away from PDP administration and sought for change. By so doing, people turned out in the Election Day to initiative change. By implication, PDP lost the mantle of leadership to APC as the winner of the election.

The Benchmark of Turning Point

Change is extraordinarily difficult but absolutely necessary in the political terrain of Nigeria. Change is unavoidable part of life. Without change; life would soon become intolerably dull (Anderson 1990:10). When the status quo became intolerable in Nigeria before 2015 general election, people did everything to make a u-turn and initiate change. In the same way, people hated the changes that brought about deteriorating health, stagnancy, social upheaval, insurgency, poverty, intrusions into their comfort zones etc. Sometimes, people react so strongly against the changes they dislike that they either try to ignore or use all their resources to reverse it. These were the situation of things in Nigeria prior to 2015 general election.

The benchmark of turning point in the 2015 general election, was historic, the political fortunes of PDP that once pride itself as the largest political party in Africa and that will remain in power for 21 years was overturned. In the election, PDP lost its preponderant influence in the Fourth Republic. There was a sudden change in the electoral trend, in the voting behaviour, and there was a wagon effect. Everybody contributed to desired change by moving to the direction of change. There was a shift in the political behavior of the people, particularly the electorates. The politics of selling conscience and buying electorates mind, using federal might to influence the result of the election through Election Management Body (INEC) was defeated. It was a clear departure from the traditional and conventional pattern of election result and the 2015 general election returned a new party APC as the major one to pilot the affair of the country.

5. Conclusion and Recommendation

Conclusion

The result of the election demonstrated the readiness of the people to join the mainstream for change. Despite the cases of fraud that were noted in the election in some area, it was convincing that the result did indeed reflect the will of the electorates. This was because the indisputable wind of change which had become necessary in the country prior to the election. The voting pattern indicated without any ambiguity that majorities of the people's preference for "CHANGE" cannot be credibly disputed and APC won the election convincingly in the count

Recommendation

Base on the findings of this study, the following suggestion are given adequate consideration to ensure meaningful and sustainable electoral values in the country: The appointment of INEC chairman should be based on integrity and worthiness. A People of impeccable character, who does not worship all form of transient things, who will not be ready to supplant his integrity to material things should be allowed to occupy the position. Individuals and political actors should develop political will that can promote democratic sustainability. People should not consider crook means as alternative option to political victory. People should play politics with its virtues. Finally, Impunity and imposition within political party should be discouraged.

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NOTE:

1. The data used for the analysis are in 4.1 and 4.2.
2. The declaration of APC as the winner of the 2015 general election without a case initiated in court by opposition party had revealed the results of the election

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Public Perception on Labour Reforms in Minna -Niger State

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Abstract

This Study examines the perception of public on labour reforms in Minna Niger State. Nine labour unions were surveyed using structured questionnaire and in-depth interview. And a sample size of 339 responses was analyzed using Yamane statistical formula, in which the respondents were randomly selected. Descriptive statistics was used to analyze the data. Out of 397 questionnaires that were administered to public servants in minna, 339 were returned and analyzed. The research findings revealed that, the reform has impact on Niger State public sector, the labour reform is effective however, the problem of poor policy implementation affects service delivery, lack of adherence to the existing labour reform and compliance to international treaties by the government has a negative effect on service delivery in Niger State. Therefore, the study concludes that, the need for a review of the existing labour reform to meet the present socio-economic development of the State. The study recommends the inclusion of organized labour unions in formulating policy, periodic review in remuneration and other welfare packages should be initiated without waiting for the workers to agitate for them.

Keywords: Labour, Reform, Public Sector and perception.
JEL Codes: E13

1. Introduction

Labour reforms are part of the economic reforms that a nation could embark upon. In Nigeria, the democratic experience which passed through a transition period as well as consolidation phase brought the need for the government to initiate labour reforms. Such reforms were among other things, meant to correct certain lapses in the existing labour policies, improve upon the same aspects of the labour legislations on the gains attained in the labour policy over the years (Yusuf and Abdulbaqi, 2012).

Consequently, reactions to socio-economic crises constitute a foundation for reforms worldwide. The ultimate aim of reforms is to redefine the role of the state in the economy (Henisz, Zelner and Guillen, 2005). Different reforms have been implemented in Nigeria although the country is yet to make appreciable progress in the management of industrial conflicts.

Labour reforms are part of the economic reforms that a nation could embark upon. In Nigeria, the democratic experience which passed through a transition period as well as consolidation phase brought the need for the government to initiate labour reforms. Such reforms were among other things, meant to correct certain lapses in the existing labour policies, improve upon the same aspects of the labour legislations on the gains attained in the labour policy over the years (Yusuf and Abdulbaqi, 2012).

In light of these reforms, the Nigerian Labour Congress (NLC) contested several policies including deregulation and withdrawal of petroleum subsidies that have resulted in inflation and erosion of social welfare (Komolafe, 2007). The NLC successfully organised five general strikes between 2000 and 2013(Niger State NLC, 2018). Strikes remain the key element of industrial conflicts in Nigeria. Labour reform refers to amendments of aspects of the labour law. The Nigeria labour law consist of different Acts, such as Trade Disputes Act and the Trade Union Act. A typical model of labour reform is the 2005 Trade Union Act, which includes new orders. For instance, in the 2005 Trade Union Act, the Nigerian government ordered that in collective bargaining all registered trade unions must

constitute an electoral college to elect members who will represent them in negotiations. Thus, the Nigerian government has amended the most important step in the collective bargaining procedures, that is, the statutory recognition of trade union as a bargaining agent for the employees within the bargaining unit in relation to terms and conditions of employment. The 2005 Act seeks to promote industrial democracy and collective bargaining as crucial mechanisms in the determination of wages and other terms and conditions of employment in compliance with the International Labour Organization requirements (ILO, 2006).

This study seeks to improve and make the public perception on labour reforms towards agitating for more effective and efficient labour sector reform in Niger State. Since the study will bring to light any flaws in the labour reforms and its implementation in Niger State. The study will add to relevant literature and used by policy makers in decision-making and policy formulation.

Policies

This and strategies that deliver public services have an overriding goal of improving the well-being of the people by providing the basic needs of life (Okojie, 2009).

Given that majority of the papers reviewed are either centered on the effectiveness or implementation of labour reforms, this study is set to investigate public perception on labour reforms in Niger state with focus on its effects on public service.

2. Literature Review and theoretical framework

Labour reform refers to amendments of aspects of the labour law. The Nigeria labour law includes different Acts, Trade Disputes Act and the Trade Union Act. A typical model of labour reform is the 2005 Trade Union Act, which includes new orders. For instance, in the 2005 Trade Union Act, the Nigerian government ordered that in collective bargaining all registered trade unions must constitute an electoral college to elect members who will represent them in negotiations.

Thus, the Nigerian government has amended the most important step in the collective bargaining procedures, that is, the statutory recognition of trade union as a bargaining agent for the employees within the bargaining unit in relation to terms and conditions of employment. It is argued that each of the components of the labour law requires major and detailed review, and thus singling out the Trade Union Act for patchy amendment is inadequate.

Labour Reforms emanate from the emergence of an ideology known as neoliberalism, which first gained acceptance in Chile and Britain in the 1970s. This ideology stipulates the need for reduction in the role of the state in the economy for promotion of entrepreneurship, investment, and socio-economic development through reductions in subsidies, tax reform, tax cuts and stabilization of money supply, free flow of trade and other market-oriented reforms (Henisz, Zelner and Guillen, 2005). These processes provide a background for the analysis of the Nigerian model of neoliberal reforms, which promote mismanagement of industrial conflicts. Dozens of countries adopted elements of market-oriented reform between 1980 and 1999. Harrowing experience of market failure in East Asia and economic doldrums in Latin America and the Community of Independent States (CIS) were adduced to political economy of reforms in the regions. It is apparent that politics of regulation and lack of transparency make reforms produce undesirable results.

Nigeria is among the countries with poor records of socio-economic development, despite various reforms. As reported by the World Bank (1998), the Nigerian industries remain underdeveloped despite implementation of reforms. Civil servants generally received low pay and benefits. Moreover, a weak incentive structure in the civil service, which did not foster good performance, resulted in a weak work ethic and poor service delivery by many government ministries, often characterized by hidden or outright corrupt behaviour on the part of many civil servants. Reforms were therefore needed to re-professionalize the civil service and increase its focus on service delivery (Okonjo-Iweala and Osafo-Kwaako, 2007).

Empirical Review

According to Yusuf and Abdulbaqi, (2012) in their study, "Democratization and Labour Reforms in Nigeria," assert that continuous marginalization of the labour force in the formulation and implementation of policies is a major factor that has made labour reforms an important issue in Nigeria. This situation has affected with grave implication for state labour relation. Nigeria governments and labour have been at loggerheads in the pursuit of

diametrically opposing goals. Evidently, the state reliance on top-bottom approach has proved defective. For example, Nigeria has signed and ratified treaties but lacked the needed capacities and willingness to comply fully with their provisions. The contemporary industrial labour situation in Nigeria can be said to be attributed to internal constraints on the government; such constraints include poor leadership and corruption. They recommended that, the emerging labour party in Nigeria introduce a systematic conflict management training programmes as a top priority in its manifestoes and Fundamentally, all the aspects that contradict the international standards in the Nigeria labour Law should be reversed and replaced with comprehensive social security policies that can facilitate rapid improvement to the reformation of labour in Nigerian economy.

Olanrenwaju, (2005b) in his work, "Ethics and National Rebirth: The role of Professional Association," posits that one of the strongest criticism against the Trade Union (Amendment) Act 2005 is the unilateral approach of Government to its enactment. To him the Amendment presents a mixed grill of opportunities and threats and might have the effect of bringing about an end to 'speculative trade unionism'. There will be now real challenges of forming and growing a trade union. Workers should be able to distinguish strong and vibrant union and identify with such. This could lead to the disappearing of non-vibrant ones and impose strong challenges on union leaders generally .He believed allowing multiple labour centres could create splintering and weaken the entire trade union system. However a high emphasis on networking among unions and their leaders could very well mitigate this. And suggested that, what the labour movement requires is making strategic adjustments.

Duru, (2012) in his study, "New Challenges for Industrial Policy in Nigeria," postulates that Industrial policy can be a powerful tool to promote rapid economic growth and development, however, Nigeria has not been able to make an appreciable progress in industrial development due to policy failure. The different governments since independent have been trying out different approaches based on the dictates of those in power and those who advise them. The result has been policy summersault and inconsistency favoring rent seeking. He ascribed that, Policy failures in Nigeria usually occur at two levels: first, at the level of formulation, and secondly, at the level of implementation. The first level occurs when a policy at the stage of formulation fails to include optimally, the correct statement of problems and their solutions. Policy failure may also occur when policy makers are influenced by primordial sentiments such as vested interests by internal and external forces. A major flaw in Nigeria's industrial policy is the failure to get inputs from the relevant stakeholders. He recommended that, industrial policy requires more research to tackled how to ensure inclusiveness, how to relate incentives with penalties, how to ensure the accountability of governments, and to evolve the type of institutions and politics that could minimize information problems, and the risks of rent-seeking.

As Orifowomo (2008) rightly observes employers especially in the public sector seldom invoke the no-work no-pay rule, possibly because the employers themselves are usually at fault by their failure to nip a looming strike in the bud. The government as a pacesetter and the largest employer of labour should lead other employers in its policy implementation. The government restructured the trade unions in both the public and private sectors to enhance the effectiveness of collective bargaining process but the government seldom uses the machinery in the public sector in comparison to what obtains in the private sector. This scenario gives the government room for unilateral determination of terms and conditions of employment which is a negation of the "partnership in progress" doctrine outlined in the National Labour Policy.

Adebisi, (2011) in a paper presented at the International Industrial Relations; African Regional Congress held at the University of Lagos, observed that the relationship between labour unions and government in the developing countries is somewhat akin to that of strange bed fellows given the frequency of disagreement between them. The lack of transparency and sincerity in their dealing with each other is the bane of any meaningful relationship between the two parties. According to Yesufu (1962), in Adebisi (2011) "the workers are extremely distrustful of government". While government has gained notoriety for reneging on its promises and statutory obligations based on signed agreements with the labour unions, the union leaders are sometimes guilty of complacency and militancy depending on the situation at hand. The absence of transparency and democracy in some union

organizations as identified by Otobo (2006) in Adebisi (2011) could exacerbate union government relationships. As a consequence, strains in relationship between the two parties, i.e. government and the labour unions, usually lead to constant industrial unrest with severe political and socio-economic repercussions**.** The paper recommended that, a high degree of openness, accountability, democracy and exemplary leadership will strengthens Government Labour relationship in Nigeria.

Theoretical Frame Work

The researcher anchored the study on Webber's theory of bureaucracy which was propounded by Max Weber on the assumptions the man is naturally lazy to work, yet he is materialistic in his approach. This assumption agrees with Douglas McGregor's theory X of motivation. In effect, Weber believed that man needs uniformity and "order" (Haralambos and Head, 1980) for him to do things right. It was in agreement with the above assertion that Arowolo (2012) posits that bureaucratic ethics are designed to regulate the behavior of employees in a work place. Weber believes that man pursues economic gain selfishly and competes, mostly in an unfair manner (Olatunji, 2013).

Max Weber inferred that man who naturally dislikes work but wants economic reward must be regulated by a set of rules in his work place hence he designed the ideal bureaucracy, suggesting that the use of coercive authority would enhance efficient performance in organizations. He opined that the increasing level of rationalization in the society necessitates legal rational domination. It is designed to accomplish large-scale administrative tasks by coordinating the work of large numbers of persons in a systematic manner, as in the public service (Salawu, 2000).

Weber (1952) argued that the effectiveness of an organization should be based on a system of Legal-rational rules that are impersonal. The above assertion implies that these rules are legally derived from the law of the land, and employees should obey the law and not individuals in the office. That is obeying the law regulating the office and not the office holder. This system of rules sets the standard operational procedure and norms that will be used to regulate the behavour of the employees in an organization. In Nigeria public service, most employees tend to pay their loyalty to their boss and not the job which is in most cases guided by primordial sentiment. Another Weber's postulation in his theory is that, the authority in an organization is derived from position of the office holder. Here Max Weber opined that the authority which an employee exercise is restricted to the level of the office such employee occupied.

Max Weber further argued that positions (recruitment, promotion, transfer and even retirement) in an organization should be based on merit – Qualification, competence and performance. Many social critics, scholars and public stakeholders have identified the Nigeria Public Service as not giving a total attention to the above Weber postulation due to the influence of social network, personal contact and connection on the public bureaucracy, "who you know and not what you know" has becomes the other of the day in the Nigeria public service.

Specification of job responsibility is another factor in Weber idea type of bureaucracy. Weber believed that for a successful operation of an organization, there should be division of labour, clarifying job holders' responsibility and expectation. This in essence will help to eliminate conflict and over lapping of duties among employees in an organization.

Max Weber in his theory also posited that an organization should be structured and related hierarchically. Authority can only be exercise effectively if positions are arranged hierarchically so that employees can know whom to report to, and who should report to him in order to avoid conflict. However in the Nigeria public service we see cases where junior staff bycott their immediate senior to relate officially with their top management whom they have primordial relationship with, hence in the Nigeria public service, the syndrome of "oga say" abounds.

The Weber theory has been criticized for not been empirical rather was more of mental constructs and that it was postulated based on his environment without considering the practicability of its ideal type of bureaucracy in other political settings. However its application is still relevant in the life of public service in many political settings like Nigeria. The bureaucratic theory as put by Max Weber has been view as the best mechanism for effective performance in any organization. Weber's ideal was conceived in a society that adhered strictly to the

rule of law, least to say in a democratic society. To him any organization that should be effective in performance must have its structure graded, rules guiding the conduct of the staff, recruitment and promotion of staff based on merit, and staff specialization with proper division of labour.

The Weber's theory is relevant to this study on the ground that bureaucracy is the principle that guides the setting and operation of Nigeria public administration which has been affected by primordial factors in Nigeria.

3. Methodology

The study utilizes a survey research design because of the type of information required. This is because survey research focuses on people, the vital facts of the people and their beliefs, opinions, attitudes, motivations, and behaviours (Adekanye: 1993). This study aimed at ascertaining the perceptions of both the management and Niger State workers on labour reforms and how it affects service delivery with regards to a study of Niger State Public Sector. The study also explored the level of awareness of the impact of labour reforms in Niger State public sector.

Population of the Study

Public Sector, as an institution, is present in each state of the federation. Based on the research objectives, Niger State public sector formed the target of the study, and as such, forms the population of the study.

The total population of Niger State Public Sector is estimated at about seventy eight thousand nine hundred and forty two (78,942). Thus represents workers in the state ministries and agencies, with a population of twenty eight thousand four hundred and seventy seven (28,477), while that of the Local Government workers stood at fifty thousand four hundred and sixty five (50,465) (Niger State Head of Service, 2018).

Sample size and Sample Techniques

Given that public sector exists in the State and local government, emphasis was placed on both the State and local government public sector. For the purpose of gathering adequate information the researcher therefore, selected nine (9) out of the forty five (45) labour unions for this study with a population of sixty two thousand three hundred and thirteen (62,313) members. And for the purpose of gathering firsthand information for the study the researcher also interviewed the state chairman Nigeria Labour Congress, and Trade Union Congress as well as the Secretary to the State Government and Head of Service. Yamane, (1967) formula was used to determine the sample size for the study.

$$\frac{N}{1 + N(e)^2} \qquad 3.1$$

Analyses of the distribution of Questionnaire

Questionnaire	Frequency	Percentage (%)
Returned	339	85.%
Not- Returned	58	15 %
Total	397	100

Source: Field Survey, 2018.

From the above Table, 397 questionnaires were administered representing 100 % of the sample population, of which 339 returned which represent 85. 46 % response rate and the remaining 58 with 15 % were not returned. This indicates a favourable response rate that permits reasonable deductions and inferences.

Limitations

This study is limited to the study of public perception of labour reforms in Niger State. It is limited to the study of nine selected labour unions within the State capital and some top government representatives. Although the researcher faces some challenges in the area of non-cooperation of some respondents and difficulties of having access to the union leaders and top government representative especially the chairman Nigeria labour congress, the chairman trade union congress, Secretary to the State government and the Head of service of Niger State.

Finally the researcher was able to distribute three hundred and ninety seven questionnaires to the respondents and interviewed the two umbrella union leaders and government representative as mentioned earlier.

The study will contribute immensely to the body of knowledge particularly in the area of industrial conflict management and industrial sociology.

4. Data Presentation

Analysis of the Data

From the data gathered on the perception of public servants in Niger state, the result

The table below, is the analysis of the responses from the questionnaires distributed to the respondents

Do you agree that the labour reforms have impact in Niger State	Responses	Percentage (%)
Strongly agree	24	7.1
Agree	242	71.4
Strongly disagree	24	7.1
Disagree	49	14.5
Total	339	100.0
Effective and Efficiency of Labour Reforms in Niger State	Responses	Percentage (%)
Yes	233	69
No	106	31.3
Total	339	100.0
Nigeria labour laws and the International labour standard	Responses	Percentage (%)
Yes	267	78.8
No	72	21.2
Total	339	100.0
Adhere to labour reforms in Niger state	Responses	Percentage (%)
Yes	146	43.1
No	195	56.9
Total	339	100.0
Do you agree with the enactment of the trade union act of 2005 as best for Nigeria industrial relation	Responses	Percentage (%)
Yes	97	28.6
No	247	71.4
Total	339	100.0
Need for new labour reform in Niger State	Responses	Percentage (%)
Yes	40	12.0
No	32	9.2
No response	267	78.8
Total	339	100.0

Source: field survey 2018

shows that majority of the respondents agreed that the reform has impact on conflict management in Niger State public sector for the development of socio-economic activities. It was found out that, the labour reform is effective for conflict management. However, the problem of poor policy implementation affects conflict management in Niger State public sectors. This finding therefore, corroborates Duru (2012) assertion that, *industrial* policy can be a powerful tool to promote rapid economic growth and development. Nigeria has not made an appreciable progress due to policy failure.

The data equally revealed that, lack of adherence to the existing labour reform is the hindrance for effective resolution of industrial disputes in Niger State public sectors. In a related view, Yusuf and Abdulbaqi (2012) assert that, Nigeria has signed and ratified treaties but lack the needed capacities and willingness to comply fully with their provisions. The situation can be said to be attributed to internal constraints on the government which he include; poor leadership and corruption by the leaders. The result revealed that the reform are not actually bad even though there is the need to review the reform to meet up with the modern socio-economic realities of Nigeria, lack of implementation of the reform is the fundamental problem in Niger State.

On the issue of Trade Act of 2005 the result also shows that, is not the best for industrial peace in Niger State. This also corroborates with the opinions of the union leaders from the interview conducted for the study asserting that, the Trade Act of 2005 was built on the bases of selfish interest by the government, aim at desterilizing the strength and unity of the unions, since they see labour union as an opposition to the policies of the government.

Finally, the analysis of the data shows that, there is a failure in the side of the government and there is the need for both the government and the unions to be proactive and committed to the implementation of the reform and work toward reviewing the reform that will bring the desire socio-economic need of the workers in Niger State. This was equally iterated from the interview conducted with the top management of the government representatives, NLC and TUC leaders.

5. Conclusion and Recommendation

Conclusions

Reform is a necessity for growth and development of any human society. Its imperativeness is born out of the reality that as human society continue to exist, there will always be new hopes and aspiration which the generality of people living in the society would want to attain.

As demonstrated in this study, issues of implementation of the reforms have generated numerous industrial conflicts and the state has been controlling the machineries for conflicts management in Niger State. Furthermore, all the aspects that contradict the international standards in the Nigerian Labour Law should be amended.

Recommendations

1. The government should always include organized labour when drawing up policies that affect the industrial relations system.

2. Government should strictly adhere to the existing labour reform for a more robust public service delivery in Niger State.

3. A comprehensive implementation of the reform should be a fundamental agenda to the government.

4. Periodic review in remuneration and other welfare packages should be initiated without the workers agitating for them.

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Exploring the Determinants of Out- of- Pocket Expenditure on Healthcare in Kaduna Metropolis, Nigeria: Evidence from a Household Survey

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Abstract

The objective of this paper is to explore the determinants of out- of- pocket spending from the analysis of households in Kaduna Metropolis, Nigeria. Using a logit model of regression approach and a sample of 225 households in the study area. The paper however, found evidence to suggest cost of patient's admission due to illness, quality of health care services, households' income, costs of drug due to illness and pattern of disease have positive and significant influence on how the out- of- pocket expenditure impacted on health care services in Kaduna Metropolis, Nigeria. The results also suggest that free health care services, social health insurance have a negative and significant influence on how out- of- pocket expenditure impacted on health care services in the study area. Based on these findings, it is obvious that there is a need to reduce the magnitude of disease occurrence in the study area. The cost of drug owing to payment for health care services and inadequate social insurance can be minimized by improving access to free health care services and increasing health care financing. This will reduce the burden of out- of- pocket spending and the level of health care service delivery will also increase. More so, there is also the need for government to regulate the activities of health care providers thereby enhancing and improving health financing through social health insurance like NHIS.

Keywords: Out- of- Pocket; Health Care; Microenterprises; Logit Model; Kaduna Metropolis; Nigeria.
JEL Codes: I12

1. Introduction

Over the years, the expenditure on healthcare is one of the critical topics being discussed in most of the literatures in health economics not only in developing countries buy also in developed economies. Health care financing in many countries of the world is still characterized by the dominance of out-of-pocket (OOP) expenditures and the inadequate prepayment policy such as social health insurance. This is owing to the fact that most of the households in such nations do not have full health insurance coverage thereby compel to incurring of huge medical expenditures whenever a household falls ill. Several studies have shown economic consequences of health hazards across different economies to review public policies on healthcare system. The Health policies are thus not only concerned with improving health status of population but also to protect households from financial catastrophe of illness (Peters *et al.*, 2002).

However, health is consider as an important variable in economic discourse as an essential input for sustainable economic growth and development. Studies such as Collins (2015) opined that healthy citizens directly result in economic growth as they are available to conduct effective activities in the workforce. World Health Organization (WHO, 2005) report also indicates it is possible for health to affect economic growth directly through labour productivity and the economic burden of illness. All these arguments are strongly backed by labour productivity hypothesis which suggests individuals who are healthier have higher returns to labour input than those without. More so, impairments in household's Health could seriously affect consumption and severely disrupt household welfare for more serious and chronic illnesses. Some studies examining out-of-pocket (OOP) healthcare expenditure at household level and conclude that (OOP) healthcare spending have an effect that can lead to poor health on economic wellbeing of

household. This formed a growing consensus in which OOP spending in the healthcare system has considered to be a significant mechanism towards impoverishing several households in developing economies such as Nigeria.

One of the most important factors in determining the quality of human capital and as well for promoting economic growth is health. Bukenya, (2009) healthcare expenditure can be credited to prolong life expectancy, reducing morbidity, and reducing infant mortality rates. Therefore, greater private health spending in form of out- of- pocket expenditure is capable of provoking disease epidemics and declining productivity. On the basis of this evidence, this study will model out- of-pocket expenditure at household level to examine an insight towards assessing the policy implication on private healthcare expenditure.

The objective of this paper is to examine the determinants of out- of- pocket (OOP) health care expenditure of households in Kaduna Metropolis, Nigeria. This study is motivated by the fact that despite the importance of health in human existence, only few or little studies were conducted on the measurement of households' out- of- pocket expenditure in health care. Therefore, this study aimed at contributing more to the literature in this area of research and reference for policy making in this area of study.

After the introduction, the rest of the paper is structured to include the second section which is the review of related literature. The third, is the methodology of the paper while the fourth part discusses the empirical results and findings and the last section was the conclusions and recommendations.

2. Review of Related Literature

Several literatures have examined the relationship between health expenditure and economic growth using various approaches and models. Kabuga and Aliyu (2017) investigated the dynamic effect of health care expenditure on economic growth in Nigeria for time series data covering the period 1986 to 2016. Using the bound testing for cointegration approach, the paper found evidence to suggest existence of long run cointegration between total healthcare spending, human capital, demographic changes and economic growth within the study period in Nigeria. The study also used Autoregressive Distributed Lag (ARDL) technique to test for short and long run parameter estimates and the paper find evidence to suggest total healthcare spending is negatively related to economic growth in the short run but positive related to economic growth in the long run. The paper also found that the parameters of total health spending are statistically insignificant in both short and long run level of analysis and the findings suggest policy makers should pay more attention to improve health care system and health status of the population so as to raise labour productivity and output level of the economy.

Other studies also used such approaches like bivariate or multivariate time series regressions for individual countries, and cross-section or panel data regression for regional or sub-regional countries to examine health care expenditure and economic growth. The country-specific study of Kurt (2015), assessed the direct and indirect effects of health expenditure on economic growth using Feder-Ram model though did not test for order of integration of each variable used in the series to check spurious correlation. The result of the finding indicated a direct impact of government health expenditure on economic in Turkey being positive and significant and its impact is negative and significant. But as the proxy for efficiency is added in the model, the study revealed that as not very significance differences occurred between government health sector and other sectors, the government health sector tends to be slightly more efficient. Moreover, Nasiru and Usman (2012) while employing an ARDL bounds testing approach found that long-run relationship exist between healthcare expenditures and economic growth. In using Granger causality test, they indicate a strong bidirectional relationship between health expenditures and economic growth though, they do not draw any inferences for the robustness of their elasticity estimates.

Some studies have also been conducted to assess the determinants of out- of- pocket (OOP) expenditure on health care in developing countries. Amakom and Ezenekwe (2012) analysed the implications of households catastrophic out of pocket (OOP) healthcare spending in Nigeria, using intensity and incidence methods, the findings of the study revealed that 24% of Nigerian households incurred catastrophic health expenditure and was more prevalent among the richest quintile in Nigeria thereby succeeded in changing the poverty level of most of the households to the lowest. The study

recommended expansion of social health insurance through National Health Insurance Scheme, ensure universal access and the provision of financial protection to the poor and vulnerable.

On the other hand, Bakare and Sanmi (2011) examined the relationship between health care expenditures and economic growth in Nigeria. Using Ordinary Least Square (OLS) method without checking for unit root the result revealed a significant relationship between health expenditures and economic growth. The study failed to indicate whether health care is a luxury good or necessity. While, Sulki and Cancer (2011) employed the use of a multivariate cointegration techniques for a series of data that include per capita GDP, per capita health expenditure and population in Turkey covering a period of 1984 to 2006, and find aggregate healthcare expenditure as less than one, but private health care expenditure is greater than one.

Also, Bukenya (2009) attempted to assess the level of potential non-stationarity of data by checking for the property of the data series used. However, in testing for unit root using Augmented Dickey Fuller (ADF), the study did not reveal the co- integration of the data used. As such, the author applied time series VAR approach to investigate possible dynamic relations between health care and economic growth in United States levels. Impulse response was therefore employed ascertain the positive relationship between personal health care expenditure changes and economic growth.

Other studies were also conducted using panel data analysis to determine income as the most significant factor in explaining the differences in the level and growth of total expenditures across various countries. Mehrara et al. (2012) assessed the relationship between health expenditures and economic growth for a sample of 13 Middle-East and North-African (MENA) countries using data covering the period of 1995 to 2005. The results of this findings provide a clue to conclude that the share of health expenditures to GDP decreases with economic growth. The results therefore suggest that health care is not considered a luxury good in MENA countries.

In contrast, Xu and Saksena (2011) and Baltagi and Moscone (2010), Dreger and Reimers (2005) employed a panel study of 21 countries in OECD covering the period of 1975 to 2001 to study the relationship between health care expenditures and GDP. The results of their findings were in consonance with a long run equilibrium relationship among health expenditures, GDP per capita and a proxy for medical progress therefore, suggests health care as a luxury good.

3. METHODOLOGY

Study Area and Methods

This study was conducted in Kaduna Metropolis, Nigeria. The Metropolis lies between latitudes 10^{0}25’28” to 10^{0}35’53” North of the equator and between longitudes, 7^{0} 21’49 to 7^{0} 30’00” East of the Greenwich Meridian. The study area covers almost 269.42km^{2} consisting three local government areas of Chukun, Kaduna South and Kaduna North.

This research was carried out for about two periods whereby the first survey was conducted between October and November 2017 while the second study was conducted between July and August 2018 in order to increase the sample size of the study from the previous 180 to 275 households within the five Local Government Areas of Kaduna South, Kaduna North, Chukun, Doka, and Igabi.

Sampling Technique and Sample Size

This study used a multi-stage sampling method to select the sample respondents. The first stage involves stratification of the study area into eight local governments as units of sampling according to their geographical location in Kaduna. The second stage of sampling was the purposely selection of five local government areas (LGAs), namely, Kaduna South, Kaduna North, Chukun, Doka, and Igabi due to the nature of health care demand in the areas. Lastly, the study also randomly selected about 45 sample households from each LGAs to ensure equal representation of the entire population. The procedure however gives a total sample of 225 households in the selected 5 LGAs areas. Hence, this study employed a structured questionnaire to generate data.

Model Specification

Following Kabuga, Takuti and Ahmad (2018), this study used a logistic regression model to assess the determinants of out- of- pocket expenditure. The study employed the model because it is assumed the probability of whether out- of- pocket spending impacted on households’ health care expenditure in Kaduna Metropolis or not. The model can however be expressed as follows:

$$\gamma_i = \beta_0 + \beta_1\chi_1 + \beta_2\chi_2 + \beta_3\chi_3 + \beta_4\chi_4 + \beta_5\chi_5 + \beta_6\chi_6 + \beta_7\chi_7 + \upsilon_i \quad (1)$$

Table 1: Definition of Variables used in the study

Variables	Types	Description
Y_i	Binary	If out- of- pocket expenditure impacted on the households' health care spending 1, if otherwise 0.
x_1	Continuous	Cost of patient's admission due to illness (per day)
x_2	Categorical	Quality of health care services
x_3	Continuous	Households' income
x_4	Continuous	Costs of drug due to illness
x_5	Continuous	Pattern of disease
x_6	Continuous	Free health care services
x_7	Continuous	Social health insurance

Source: Author's computation 2019

Variable Measurement

Dependent variable: This is measured as out- of-pocket expenditure which may have impacted on the health care services of households in Kaduna Metropolis, Nigeria. It is defined in binary form (Yes =1, No = 0), implies that If the out- of- pocket impacted on the health care spending of households then represented by 1, if otherwise 0.

Independent Variables: This paper used numerous or multiple independent variables to explain the feature of the dependent variable which are measured as follows:

Cost of patient's admission due to illness: this is a continuous variable and it is used to measure the amount to be paid by patients while on admission for certain illness. This is usually counted per day spent on admission.

Quality of health care services: the variable is a categorical one and was measured with aid of a Likert scale such as; excellent, very good, good, fair and poor.

Household's income: this is also a continuous variable, measured in Naira. The households were asked to state their monthly earnings to be compared with what was spend for health care services.

Costs of drug due to illness: it is a continuous variable and measured in monetary terms. The households were asked to state the amount required to spent on drug while on illness.

Pattern of diseases: this variable is also a continuous variable. It measured the type and magnitude of illness per period of time. The households were asked to state the type of illness they had in a recent period.

Free health care services: it is considered a continuous variable. It measured the type of health care delivery without making payment for it. The households were asked to state whether they enjoy any free health care service in the study area.

Social health insurance: it is a continuous variable. It measured the level of social health insurance package purchased by households. The respondents were asked to state whether they were covered by any health insurance package.

4 Results and Discussion

The study started by analysing the descriptive statistics of the respondent as indicated in Table 2. The results showed that on average, most (47.55%) of the households who bear the burden of out- of-pocket expenditure on health care services fall within the age bracket of 36-45, meaning the households are likely to be at their productive age. The study also revealed that majority (63.56%) of the households are males and most of them (68%) are married. Moreover, the result also suggests that most of households (45.33%) have at least secondary school education and majority of them (46.22%) are self-employed.

Table 2: Descriptive Statistics

Variables	Frequency	Percentage
Age		
18-25	15	6.67
26- 35	33	14.67
36- 45	107	47.55
46-55	48	21.33
>55	22	9.78
Gender		
Male	143	63.56
Female	82	36.44
Marital Status		
Married	153	68.00
Single	72	32.00
Level of Education		
Tertiary education	65	28.89
Secondary education	102	45.33
Primary education	33	14.67
Others	25	11.11
Occupation		
Employees	85	37.78
Self employed	104	46.22
Unemployed	36	16.00

Source: Field Work, (2019)

This study reported in table 4 a logistic regression model for the forecasting of the dependent variables from the independent variable. The model is however based on the binary outcome modelling where the interest is mostly on an odd ratio or marginal effect in with respect to the explanatory variables and not the sign of the coefficient as indicated in table 4.

Table 3: Estimated Regression Coefficients

Variables	Logit	Marginal effect
Cost of patient's admission due to illness	0.343***	0.054
	(0.098)	(0.021)
Quality of health care services	0.440***	0.217
	(0.220)	(0.094)
Households' income	0.788***	0.691
	(0.331)	(0.252)
Costs of drug due to illness	1.053***	1.221
	(0.473)	(0.352)
Pattern of disease	-1.322***	1.051
	(0.621)	(0.497)
Free health care services	-0.749***	0.484
	(0.321)	(0.201)
Social health insurance	2.642***	1.427
	(1.214)	(0.672)
Constant	2.392***	
	(1.012)	
Number of obs = 225		
LR chi2(7) =122.72		
Prob > chi2 = 0.0000		
Pseudo R2 = 0.3734		
Log likelihood = -42.54236		

*Source: Researchers' computation (2019) using STATA 15. Figures in parenthesis are standard errors. The asterisks are p-values, implying ***significant at 1%, **significant at 5% and *significant at 10%.*

From table 3, the study finds a strong evidence to suggest existence of a significant relationship between the cost of patient's admission due to illness (per day) and how out- of- pocket expenditure impacted on household's health care services. The finding suggests that as the cost of patient's admission due to illness (per day) increase there is a likelihood that the out- of- pocket spending by households impacted on health care services in the study area. The finding indicates the probability that, ceteris paribus, as cost of patient's admission due to illness increases per day, the impact of out- of- pocket expenditure on household increases by approximately 0.054%.

The finding also reported that after controlling all other variables, quality of health care services is significant and positively related to how the out- of- pocket expenditure impacted on household's health care spending. The marginal effect suggests that the probability of out- of- pocket spending impacting on health care service increases by 0.22% as the quality of health care services by 1%.

The estimated result also indicates that households' income is significant and positively related to how the out- of- pocket expenditure impacted on health care services. While, the marginal effect suggests there is every probability that as the percentage of households' income increase by 1%, the impact of out- of- pocket expenditure on households' health care expenditure increases by approximately 0.7%.

It is also reported that an increase in the costs of drug due to illness is likely to have a significant effect on how the out- of- pocket expenditure impacted on household's health care spending. However, the finding suggests that an increase in the costs of drug due to illness is likely to have a significant impact on the health care spending of the households in Kaduna Metropolis. The marginal effect suggests that after holding all other variables constant, as costs of drug due to illness, there is every probability that the impact of out- of- pocket expenditure on health care expenditure increases by approximately 1.22%.

It is also shown in table 3 that, there are an inverse and significant relationship between the pattern of disease when households are subjected to out- of- pocket spending for a given type of disease and how it impacted on the health care expenditure in the study area. This suggests that as the pattern of disease changes for at least one hour per day, the probability of how the out- of- pocket expenditure impacted on households are likely to decreases by at least 1.1%. Interestingly, the findings in table 4 also indicates that, it is evident that as free health care services increase by one day, the probability of out- of- pocket expenditure impacting on the household's health care spending decreases by at least 0.5%.

The table 3 also revealed a significant and positive relationship between the social health insurance and how the out- of- pocket expenditure impacted on household's health care expenditure. The findings from the result indicates that the relationship is positive as the social health insurance increases, there is likelihood that the impact of out- of- pocket expenditure on health care services will also increase. The marginal effect suggests that as the social health insurance increases by one percent, the probability of how out- of- pocket expenditure impacted on health care services increases by at least 1.4%.

5. Conclusions

The objective of this paper is to explore the determinants of out- of- pocket expenditure on health care services of households. The paper however, used logit regression model and found evidence to suggest cost of patient's admission due to illness, quality of health care services, households' income, costs of drug due to illness and pattern of disease have positive and significant influence on how the out- of- pocket expenditure impacted on health care services in Kaduna Metropolis, Nigeria. The results also suggest that free health care services, social health insurance have a negative and significant influence on how out- of- pocket expenditure impacted on health care services in the study area.

Based on these findings, it is obvious that there is a need to reduce the magnitude of disease occurrence in the study area. The cost of drug owing to payment for health care services and inadequate social insurance can be minimized by improving access to free health care services and increasing health care

financing. This will reduce the burden of out- of-pocket spending and the level of health care service delivery will also increase. More so, there is also the need for government to regulate the activities of health care providers thereby enhancing and improving health financing through social health insurance such as National Health Insurance Scheme.

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Impact of Land Registration on Business Environment and Wellbeing in Kano State using Logit Regression Analysis

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Abstract

The paper ascertains the impact of land registration on business environment and wellbeing in Kano state. The data employed for the probability analysis is qualitative in nature gathered using a structured questionnaire administered to households in Tarauni as the pilot Local Government Area. A multi-stage sampling was employed where three wards in Tarauni local government were selected namely: Darmanawa, Gyadi Gyadi Kudu and Tarauni. Two major towns each were selected from the three chosen wards and data were then collected from 40 selected households from each ward making a total of 240 sampled households. The study employed a logit regression model where the endogenous variable is a dummy or categorical variable with 1 representing business environment and wellbeing are improved and 0 if otherwise.The paper found that while household size, dependency ratio andwomen ownership of land, have business environment and wellbeing decreasing effect, the male household head, education, tenure security and land market participationhave been veritable predictors for improving business environment and wellbeing. Significant percentage of the respondents was not aware of importance of Certificates of Occupancy (CofO) in getting access to credit. Although the idea was so appealing to them, but willingness to borrow indicator result shows less likelihood of the property owners to collect loans with their land certificates. The paper, in view of the impact of land registration and slow phase of the collection of (CofO) by the beneficiaries, recommends that enlightenment should be intensified.

Keywords: Land Registration, Business Environment, Wellbeing, Logit
JEL Codes: R14

1. Introduction

Evidence of chaotic property rights and flawed land registration system was established in Kano State, Nigeria where millions of people are living without possessing formal titles of the plots of land they occupy and are, therefore, dissatisfied with the sporadic registration process. Consequent to that, Systematic Land Titles Registration (SLTR) was introduced by Growth and Employment of States 3 (GEMS3) to ensure the provisions of simplified titling and registration procedures; to reduce number of days to acquire certificate of occupancy (CofO); to reduce costs; to enable effective land dispute resolution mechanisms; to enhance transparency of information and increase geographic coverage.

Thus, SLTR has been considered as a powerful policy tool for poverty reduction in view of its multifaceted trickle-down and multiplier effects. Lack of land titling hampers security of tenure which in turn delays the attainment of assurance effects, realizeability effects and collateralization effects. Those effects have significant economic impacts on investment, revenue generation, productivity and growth. Specifically, land titling could allow the owner to use it as collateral to secure loan and this credit could be invested as capital in productive activities, thereby increasing employment, labor productivity and income.

Against this backdrop, the paper aims to examine the impact of land registration on business environment and wellbeing in Kano state, Nigeria. The need for such impact analysis is predicated on the fact that improved business environment and wellbeing are largely functions of households' social and economic characteristics and other SLTR outcome indicators.

2. Literature Review

Motivations for Land-Titling and Registration

To begin with conceptualization, land titling is the initial process of formally recognizing rights to land.

Land registration is the process of initially recording legally valid rights to land. Title registration carries the additional guarantee of not only those rights, but also the guarantee of the transactions regarding those rights being legally valid by virtue of the recordation process.

Land issues have been chaotic and problematic land registration that was flawed with irregularities, bureaucracy and corruption in Kano State (Tsauni, 2016). The situation was not different in most African countries and other developing nations. The pathetic situation led to the growing interest in land registration and formalization of property rights to land in Africa. The interest was motivated by two major reasons from the literature. First, since the 1990s, most African countries have passed new land legislation to remedy some of the perceived shortcomings of existing systems, particularly by strengthening customary land rights, recognizing occupancy short of full title, improving female land ownership, and decentralizing land administration. Advances in information technology and remote sensing have revolutionized the way land is administered in other regions and reduced the cost by providing tools for implementation that were not available before. Second, higher prices for food, fuel, and fiber are capitalized in land values and, together with emerging demand for land by investors, add to pre-existing pressures on land from urban expansion all over Africa. Clearly defined property rights (at the individual or group level) and a well-governed system of land administration are essential to avoid socially undesirable outcomes and conflicts.

Although the importance of formalizing property rights has been emphasized by a number of scholars (de Soto, 2000; Kolbe-Booysen, 2017;Hadejia and Andrew, 2017), surprisingly little seems to have happened on the ground or be sustained.

The fragility of property rights is considered a crucial obstacle for economic development(North and Thomas, 1973; North, 1981; De Long and Shleifer, 1993; Acemoglu,Johnson, and Robinson, 2001; Johnson, McMillan and Woodruff, 2002; Kolbe-Booysen, 2017; Hadejia and Andrew, 2017). In developing world,a pervasive manifestation of feeble property rights are the millions of people living inurban dwellings without possessing formal titles of the plots of land they occupy (Deininger, 2003; Banerjee and Duflo, 2006; Tsauni, 2017 and 2018a). The absence of formal property rightsconstitutes a severe limitation for the poor. In addition to its investment effects, the lackof formal titles impedes the use of land as collateral to access the credit markets (Federet al., 1988; Hadejia and Andrew, 2017 and Kolbe-Booysen, 2017). It also affects the transferability of the parcels (Besley, 1995), makinginvestments in untitled parcels highly illiquid. Moreover, the absence of formal titlesdeprives poor families of the possibility of having a valuable insurance and savings toolthat could provide protection during bad times and retirement, forcing them instead torely on extended family members and offspring as insurance mechanisms.To this end, land-titling programs have been recently advocated in policy circles as a powerfulintervention to rapidly improve business environment and reduce poverty.

Economic Impact of Land-Titling Programmes

Proper titling could allow the poor to collateralize the land. In turn, this credit could beinvested as capital in productive projects, promptly increasing labor productivity andincome. Inspired by these ideas, and fostered by international development agencies,land-titling programs havebeen launched throughout developing and transitioneconomies as part of poverty alleviation efforts.The literature identifies three channels through which higher security and betterenforcement of property rights can, in principle, affect economic outcomes. First, clearly definedproperty rights to land and the ability to draw on the state's enforcement capacity will lower therisks of squatters and eviction, increase incentives for land-related investment (Bresley, 1995),and reduce the need for land owners to expend resources to stake out or defend their claims. Thelatter can be especially important to groups, e.g., women and the traditional discriminationagainst them owning land (Joireman, 2008).

The positive impacts of more secure land tenure on investment and land values in ruralareas have been demonstrated in China (Jacoby et al., 2002), Thailand (Feder et al., 1998), LatinAmerica (Deininger and Chamorro, 2004; Field et al., 2006; Bandiera, 2007; Fort, 2007), EasternEurope (Rozelle and Swinnen, 2004), and Africa (Deininger and Jin, 2006; Goldstein and Udry,2006). In urban areas, efforts to enhance tenure security have led to increased levels of self-assessedland values (Lanjouw and Levy, 2002), greater investment in

housing (Galiani andSchargrodsky, 2005), and more female empowerment (Field, 2005).

Land registration will also reduce the cost of renting or selling land. Renting allows land owners totap new sources of income, but still retain their land for insurance or old-age protection, or toconsolidate it and cultivate larger farm areas. A certificate of land ownership can allay fears thatrental land can be taken away, either by the government through redistribution or by a tenantwho does not vacate it at the end of the lease period. Certificates can help when migrationrequires land owners to be absent temporarily or if the number of registration transactionsincreases beyond the capacity of informal, local mechanisms to handle them transparently. InChina, rental land contributed to occupational diversification and was estimated to haveincreased productivity by about 60 percent (Deininger and Jin, 2008).

3.Methodology

The data employed for the probability analysis is qualitative in nature gathered using a structured questionnaire administered to households in Tarauni as the pilot Local Government Area in Kano. A multi-stage sampling was employed where three wards in Tarauni local government were selected namely: Darmanawa, Gyadi Gyadi Kudu and Tarauni. Two major towns each were purposively selected from the three chosen wards and data were collected from 40 selected households from each ward making a total of 240 sampled households.

The study employed a sophisticated micro econometricmodeling to ascertain the impact of land registration on business environment and wellbeing in Kano state.In the Logit Modeladopted from Chaudhry (2009) and Jibril (2012), the endogenous variable is a dummy or categorical variable with 1 representing business environment and wellbeing are improved and 0 if otherwise.

The logit model is specified as:

$$IBEW = \beta_0 + \sum \beta_i \chi_{ij} + \mu_i \qquad 1$$

where,
IBEW, improvement in business environment and wellbeing, are unobserved latent variables. What is actually observed is a binary variable say IBEW defined by

The scenario here is that outcome indicators of SLTR and socioeconomic characteristics influence business environment and wellbeing improvement or not. The estimable equation then becomes:

$$IBEW = \beta_0 + \beta_{1i}HHS + \beta_{2i}HHG + \beta_{3i}EDUL + \beta_{4i}OAC + \beta_{5i}CTW + \beta_{6i}CTE - \beta_{7i}WOL + \beta_{8i}LTS + \beta_{9i}LMP + \beta_{10i}ACA + \beta_{11i}WTB + \beta_{12i}LV + \beta_{13i}CLV - \beta_{14i}AVL + \beta_{15i}HSLR + \mu_i \qquad 2$$

The parameters $_i$ indicate the influence of the regressors (SLTR indicators and socioeconomic characteristics) on the probability of business environment and wellbeing to improve or not. The variables for Logit model are described in table 1.

Table 1: List of Variables Determining economic potentials of SLTR using Logit Model Analysis

Variables	Description of Variables
Dependent variable	
IBEW	= 1 If business environment and wellbeing are improved = 0 otherwise
Independent variables	
HHS	Household size
HHG	=1, if property owner is a male and = 0, otherwise
EDUL	Household Educational level
OAC	=1, if household own a car, and =0, otherwise
CTW	=1, if property is connected to water, and =0, otherwise
CTE	=1, if property is connected to electricity, and =0, otherwise
WOL	=1, if women own property, and = 0, otherwise
LTS	=1, if secured, and =0, otherwise

Variables	Description of Variables
LMP	=1, if participation is improved, and =0, otherwise
ACA	=1, if aware, and =0, otherwise
WTB	= 1, if willing to borrow, and =0, otherwise
LV	=1, if value of landed property appreciated =0, otherwise
CLB	= 1, If certified land offers more benefits, and = 0, otherwise
AVL	= 1, If household has added value e.g. structure or amenities = 0 otherwise
HSLR	=1, if very satisfied with the land reform programme =0, otherwise

Source: constructed by the researcher, 2017

It was hypothesized that almost all the variables have positive relationship with improvement in business environment and wellbeing. In other words, the SLTR performance indicators have direct probability or likelihood of improving business environment and wellbeing while other variables have negative/inverse relation with IBEW.

The findings in the next section of the paper are the basis for ascertaining the potential economic impact of the land registration programmeon improvement in business environment and wellbeing of people in Kano. The land registration is expected as apriori to unveil more opportunities for investment, revenue generation and poverty reduction.

4. Results and Discussions

The logit regression model was estimated using dummy variable (1, 0) for business environment and wellbeing as the dependent variable to analyse the impact of the land registration. The SLTR outcome indicators and socioeconomic characteristics were used as explanatory variables.

Table 2: Estimates of the Determinants of SLTR Potentials using Logit Regression Analysis

Explanatory Variables	Coefficients (standard error)	z-statistics
HHS	-0.171*	0.553
HHG	-0.224**	-2.22
EDUL	0.89**	0.57
OAC	0.348**	-0.59
CTW	0.98**	0.66
CTE	0.002*	0.43
WOL	-1.77**	0.77
LTS	0.0012*	0.04
LMP	0.0014*	-0.16
ACA	0.0018**	3.71
WTB	-2.225	6.20
LV	0.235**	0.73
CLB	0.66**	1.94
AVL	0.26*	0.32
HSLR	0.47**	0.31
Constant	3.99**	-
Number of Observations = 24, Log likelihood = -30.76		
Test that all slopes are zero: G = 104.006, DF = 13, P-Value = 0.006		

*Notes: * Indicates statistical significant at 1% level; ** Indicates statistical significant at 5% level;*
Source: Computed by the researcher using Stata 11

The regression results (table 2) indicate that some coefficients have positive relationship with improved business environment and wellbeing while others have negative relationship. The household size (HHS) at 5% was found to be statistically significant and have negative impact on the probability of business environment and wellbeing in the area to be improved. The finding suggests that household size could become a major constraint to SLTR programme. This is because; higher household size has a business environment and wellbeing - decreasing role as the income per head would be insignificant and lean chances to invest. It is further buttressed by the dominant polygamous marriage in the area.

The probability of the business environment and wellbeing to improve is likely to increases with a male household head. But where dependency ratio is high as revealed by the social data, chances of land related investment by the property holders become hampered. The dependency ratio is defined as the ratio of number of family members less than or equal to 18 years and more than or equal to 65 years to the household size.

Education is recognized to have business environment and wellbeing increasing effect. As expected, the educated the household head, the higher the likely contribution of the household to improved business environment and wellbeing. This is particularly when the household has a gainful employment or has acquired any trade skills. While male-headed households have high likelihood to contribute compared to female-headed households. Ownership of a car at 57%, connection to water (91%) and connection to electricity (98%) increase the chances of landed property in the area to attract investors. This potential was as a result of geographical location of the LGA and its closeness with the main city. The platform is therefore a veritable source of information to relevant government units and the private sector that provide services to the area like Kano State Electricity Distribution Company (KEDCO).

Another indicator of improving business environment is women ownership of land and participation in the land market. Women ownership of land (-1.77) was found to be low and has less probability of the likelihood to add value to their property or invest due mainly to lack of awareness and cultural inertia. Perhaps this might be due to low participation of women in economic activities in northern Nigeria and the dependency culture of the northern women. There is significantly high likelihood of increasing tenure security of property at 1% level of significance which will go a long way in boosting the business climate. As a corollary to that, a lot of opportunities for investors exist in the land market. This is buttressed by the potential of rising land market participation in the study area at 1% level of significance. Therefore, tenure security and land market participation are veritable predictors for improving business climate and wellbeing.

Significant percentage of the respondents was not aware of importance of CofO in getting access to credit. Although the idea was so appealing to them, but willingness to borrow indicator result shows less likelihood of the property owners to collect loans with their land certificates. Cultural barriers, high rate of interest, and compliance burden were some of the impediments found to likely hinder any potential increase in borrowing. Titled lands have high likelihood of increasing value at 5% and the worth of certified properties would significantly outweigh the untitled land in the control local governments of the State. In that vein, landed property owners have high probability of adding value to their houses as investment would potentially be attracted.

Results show that households interviewed were very satisfied with the titling and registration procedure which was characterized with simplicity, transparency, cost effectiveness and efficiency. The SLTR was by far not comparable with the old registration system that was engulfed by inefficiencies, compliance burden, corruption and uncertainties. This last variable, household satisfaction with the SLTR programme assesses the impact of the reform on the wellbeing of people of Tarauni in particular and Kano State in general. The household were found to be very satisfied with the SLTR, even though, a lot is needed to be done to reach out to beneficiaries and to strategies on how best to make them pay for the CofO.

5. Conclusion and Recomendation

The paper examined the impact of socioeconomic characteristics of land owners and SLTR outcome indicators on business environment and wellbeing in Kano state. The study was motivated by the chaotic

and problematic land registration existing for ages in the State that has been flawed with irregularities, bureaucracy and corruption. The curiosity came out of the need to ascertain the difference between the two land registration systems, and, indeed, the impact of the new system (SLTR) on business environment and wellbeing of people in the pilot area. having estimated the logit regression model, the paper found a mixed impact of the socioeconomic and SLTR outcome indicators on the business environment and wellbeing among the people and economy of Tarauni. Evidence has shown that the SLTR has been more appropriate as attested to by results.

The paper, in view of the impact of land registration and the slow phase of the collection of (CofO) by the beneficiaries, recommends that enlightenment should be intensified and the same exercise be replicated in other urban local government areas of the state.

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Petroleum Scarcity and Quality of Life Among Commercial Motorists in Kaduna Metropolis

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Abstract

The study examined the relationship between petrol scarcity and quality of life of commercial motorists in Kaduna metropolis. The metropolis was divided into three major clusters namely, Kaduna South, Kaduna North and Kaduna Central. Cluster sampling procedure was employed; data were collected on socio-demographic characteristics of the respondents and their experience of petrol scarcity in relation to their income and quality of life. This was made possible via structured questionnaire. Two null hypotheses were tested and the result of the first indicated an inverse relationship between the incident of petrol scarcity and the level of income of the respondents while that of the second revealed similar relationship between petrol scarcity and quality of life of the motorists studied. This was made possible via the use of regression analytical tool. Some useful recommendations were also provided.

Keywords: Petroleum, Scarcity, income, Quality of Life, Motorists, Kaduna
JEL Codes: O29

1. Introduction

Generally, issues relating to quality of life of the people have been among the most fundamental facts of discussions within the domain of humanities, particularly the political science, economics and Sociology among others. In political science, for example, the general consensus is that, political leadership should be more focused on the leaders' ability to improve the quality of life their subjects. That is why the success or otherwise of their administration is highly dependent on the extent to which they are able to live up to such expected role. Similarly, conventional economists have rightly observed that, quality of life remains among the most important qualitative indices for economic development of every society. They therefore conclude that, unless there is a considerable improvement in the quality of life of a people, development cannot be said to have taken place in any human society. In the same vein, development sociologists have been able to examine the relevance of quality of life to the general socio-economic well-being of a people. They therefore conclude that, unless both the manifest and the latent elements of the causal factors, for quality of life are strictly examined, individuals or group understanding of what constitutes development can never be complete.

However, a glance at the focus and direction of analysis in most of the recent studies, theoretical postulations or conceptual clarifications, that relate to the question of quality of life, would several that, many of these works majorly focus on the manifest, as against the latent elements of the causal factors of the problem, in question. Whereas, a critical look into the nature and dynamics of the phenomenon, one would come to see that, a lot of latent factors could be held responsible for the conditions of quality of life of people. One of such elements is the availability of, and accessibility to, some of the basic needs of everyday living, among which is *Premium Motor Spirit* (PMS), also known as petrol. Petrol and other related products are important basic needs of everyday modern living; without which production, distribution and consumption of goods and services become almost impossibility (Lukman, 2001). Going by this analysis, it could be right to assume that, any deficiency in the availability and affordability of the petroleum product is very likely to have a significant impact on the overall quality of life of the people.

In relation to Nigeria, the incidence of petrol scarcity has become a recurrent event that has stricken the concerns of various individuals and stakeholders within the academic and non-academic professions. For example, some scholars have described the incidence of petrol scarcity, in Nigeria, as a *Resource-Curse;* because it reflects a form of scarcity of what the country has in abundance. Although Nigeria is reputed as the sixth largest producer of crude oil in the world, the country suffers intermittent shortage of petrol, the macro-effects of which cannot be adequately quantified in monetary terms. But a number of companies and related industrial concerns are known to have been folding-up on a daily basis; thereby throwing the hitherto, self-employed Nigerians, such as commercial motorists, into the already saturated labour market (Lukman, 2001:4).

Inferring from what has been said so far, it is evident that, the incidence of petrol scarcity in Nigeria is a problem with spill-over effects, capable of negatively affecting the quality of life of an average Nigerian. Despite this prevailing reality, however, little research efforts have been directed towards this end. It is therefore; against this background that, this study aimed at, not only covering this palpable gap, by means of empirical evidence, but also examining the extent to which petrol scarcity is a factor predictive of quality of life of commercial motorists in Kaduna metropolis.

Objectives of the study

The general aim of the study is to examine the effects of petrol scarcity on quality of life among commercial motorists in Kaduna metropolis. Specifically, the objectives of the study include:

i. examining the patterns that petrol scarcity takes in the study area;
ii. ascertaining on the dynamics of quality of life among commercial motorists in Kaduna metropolis and;
iii. finding out how the incidence of petrol scarcity affects quality of life of commercial motorists in the study area.

2. Literature Review

Conceptual Clarifications

Some important terms are conceptually examined in order to have a better understanding of the topic under discussion.

Concept of Quality of Life?

What parameters to be used in measuring the quality of life of the people, is one of the fundamental questions that has been debated for time immemorial, within the academic circle, different work environments and in many spheres of life. As a concept, quality of life is understood differently by different individuals under different social situations. Basically, it refers to the degree to which basic human needs are satisfied in relation to the individual and, or group perceptions of subjective well-being (Costanza *et al*, 2008). The dynamics involved in assessment of quality of life of the people includes financial security; job satisfaction; family life; psychology of degree of happiness, health and safety among numerous others (Akinyemi *et al*, 2002).

According to Ferrans (1990), what constitute quality of life may be arranged in the following order: (i) normal life, (ii) Social utility (iii) satisfaction with life, (iv) degree of happiness (v) ability to achieve personal goals ad (vi) natural capacities (Ferrans, 1990).

For a critical appraisal of the appropriateness of the six identified Ferran's conceptualizations, the following points are further observed. i, the concept of quality of life should not be viewed as synonymous to that of health status" or "functional abilities". ii, Quality of life becomes easily understood when its appraisal relies heavily on subjective factor(s) as against objective parameters; iii, there exists a poor distinction between determinants and indicators of quality of life; iv, quality of life is dynamic; that is it changes over time; quality of life can be influenced negatively or positively; an overall assessment of quality of life is preferable to that of health-related criterion that is emphasized in some recent studies.

Looking at the conceptual pitfalls, it is revealed that the only conceptualization that appears to succeed in dealing with the conceptual problem is the one that sees quality of life in terms of people satisfaction with life. It is against this background that the study conceptualized quality of life as "the magnitude or the degree of total life satisfaction that can be positively or negatively influenced in relation to individuals' or group perception of certain aspects of life they deem important to them". By implication, assessment of quality of life requires an overall measurement of life satisfaction of the people. Some external factors like family life, work,

and physical health can be of additional importance, as they equally impact, positively or negatively on socio-economic well-being of the people.

Petrol Scarcity in Nigeria

At macro-sociological level, petrol is often referred to as the black gold of the twentieth century as it is one of the most lucrative sources of wealth of the world. Its exploitation has created some of the largest fortune and has helped to achieve impressive economic growth and development of different economies of the world. Likewise, in Nigeria, the commercial production of petroleum, which began as early as 1958, has since become the mainstay of the country's economy, contributing about 93 percent of Nigeria export earnings, 75 percent of foreign earnings, 87 percent of total government revenues, and 45 percent of Gross National Production (Augustine, 1990). At micro-sociological level, petrol has remained instrumental to the growth of small and large scale businesses, by means of which individuals and group earn their living in Nigeria.

However, from 1974, when the first problem of fuel surfaced, there have been a number of commentaries on its effects on income and quality of life of Nigerians. However, most of these commentaries especially the ones found on the pages the National Dailies only reflect the product of casual observations as against in-depth analytical studies. For example, the report of the special committee on the review of petroleum product, supply and the distribution, carried out in October 2000, and us with a forth right account when its stated that:

> *... the effects of in adequate supply and high unstable prices of petroleum product have been devastating to end-users, especially the urban and rural poor. These categories of Nigerians have been further marginalized in terms of real earnings and purchasing power, thus undermining the poverty alleviation objective of the government capacities utilization in the manufacturing sector have also continued to deteriorate because of the shortages and non availability of Automobile Gas (AGO) and Low Pour Fuel Oil (LPFO), which provides energy to industrial machines and plant (FRN, 2000:16-17).*

Though the study has been criticized widely, as an outcome of government effort to justify its plan to deregulate the downstream sector of the petroleum industry, the report did not shy away from mentioning the negative impact of petrol scarcity on the populace. It is clear that the report is not only silent on crippling effects the scarcity, in question, has on transportation and price of food stuff, but also did not take into cognizance the loss of jobs and loss of personal incomes to millions of Nigerians. Again, the report did not say anything about the unquantifiable man-hour loss to the national economy resulting from the length of time taken at the filling stations to get the scarce products.

In a review of the current state of country's downstream sector, Lukman, the late Nigerian former oil minister, made similar assertion by saying:

> *...Products has been scarce, leaving many people to queue endlessly at fuel stations with the attendant waste of man-hour. Scarcity has also encouraged boarding, mishandling of product and over pricing in the black market (see Lukman, 2001:4).*

In the most recent report, just released by the Nigerian Bureau of Statistics, it has been observed that, about 1.46million formerly employed Nigerians have become unemployed in the third quarter of 2015 while about 518,102 have become unemployed in the fourth quarter of 2015. The Nigerians who became unemployed within the first and second quarter of 2016 now stands at 2.6 million (NBS, 2016).

With this ugly picture painted above, one can rightly argue that, the overdependence on oil by the Nigerian government and the individuals could be contributing factor. If the trend remains unchecked, it could further negatively affect both the aggregate and disposable income of government and individuals. This could further negatively affect the quality of life of the people in the country.

3. Methodology

This study is purely a survey research and survey design becomes the best method to be used in conducting the research. This is because of the focus of the study which aimed at examining the relationship between two operational variables. This study was conducted in Kaduna Metropolis-Kaduna; the capital city of Kaduna State, founded by the British in 1913. (Dansabo,2006). It is a very busy commercial and industrial centre, where commercial motorists form a major socio-economic

component. This is the rational behind the selection of commercial motorists as the target population for this study.

The population of the study consists of 2513 registered commercial vehicles in the metropolis and multi-stage sampling procedure was used to select a sample of 10% of the commercial motorists, which made the sample respondents to stand at total 251. The study started by dividing Kaduna Metropolis into three major clusters, Kaduna South, Kaduna North and Kaduna Central respectively. Cluster sampling procedure was employed to facilitate the process of administering questionnaires to the targeted motorists. Within each cluster, 2 motor parks were selected, giving us a total of 6 motor garages. Therefore, 6 major motor parks were selected as representative of the total number of motor parks (55) within the metropolis. Selection of the commercial motorists was guided by that of motor parks.

Both primary and secondary sources were utilized to generate data for this study. Questionnaire was used as the instrument of data collection. The questionnaire used consists of three major parts, with the first section collecting socio-demographic data of the respondents, the second part collecting information on the respondents' experience of petrol scarcity while the last segment dwelling on data relating to quality of life of the population studied respectively. The method of data analysis consists of both descriptive and inferential statistics. Frequency count and percentages were used as descriptive statistics to achieve objective one and two while regression analytical tool was used as inferential statistical in the study to achieve objective three.

4. Presentation and Analysis of Data

This sub-section is used to present and analyze primary data generated for the study.

Table 1: Socio-demographic Characteristics of Respondents

1	Age in years	Frequency	Percentages
	Below 20	15	59.98
	21-30	53	21.12
	31-40	67	26.69
	41-50	98	39.04
	Above 50	18	7.17
	Total	251	100.00
2	Marital Status	Frequency	Percentages
	Single	27	10.76
	Cohabiting	12	4.78
	Married	162	64.54
	Divorced	50	19.92
	Total	251	100.00
3	Education	Frequency	Percentages
	No formal education	22	8.7
	Primary School	34	13.55
	Junior Secondary School	61	24.30
	Senior Secondary School	88	35.33
	Tertiary	46	18.33
	Total	251	100.00
4	Monthly Income in ₦	Frequency	Percentages
	Below 50, 0000	41	16.33
	51,000-100,000	158	62.95
	Above 1000,000	58	20.72
	Total	251	100.00
5	Type of Accommodation	Frequency	Percentages
	One-wing room apartment	64	25.50
	Self-content	100	39.84
	Flats	54	21.51
	Extended family dwelling	33	13.15
	Total	251	100.00

Source: Researcher's fieldwork, 2016

From table 1, the age pattern of the respondents revealed that the proportion of them in age group 21-30, 31-40 and 41-50 are higher as compared to what obtained in the remaining two groups-Below 20 and above 50. This implies that the majority of the sample population is in the economic active group. Then marital status of the respondents indicated that, the percentage of those who are married (64.5%) is higher as compared to those who are single (10.8%) cohabiting (4.8%) and the divorced (19.9%). This observation, especially on the percentage of the divorced, reflects the effects the economic hardship that prevailed during petrol scarcity. The education pattern revealed that, at one extreme end, about 22 (8.8%) of the respondents had no formal education. At the other end, about 46 (18.3%) of the respondents have higher educational qualification than the rest. In between the two extreme ends, the highest number of the respondents only had primary school education (13.6%), junior secondary school certificate (24.3%) and senior secondary school certificate (35.1%). By implication, majority of the respondents were uneducated. This reflects the rationale behind their total dependent on their occupation which is also dependent on availability of and accessibility to petroleum products. The distribution of the respondents according to their level of monthly income indicated that, the average income earners are higher in number (62.9%) as compared to the low income (16.3%) and high income groups. This shows a class division even within the same occupational distribution of people. With respect to distribution of respondents by the type of residential accommodation, these occupying self-content apartments are higher in number (39.8%) as compared to those occupying one- wing-room apartment (25.5%), flats (21.5%). This pattern may reflect the effect of urbanization and modernization in the study area. Many studies have indicated that types of housing, among others, have both negative and positive impact on the quality of life of the people (Akinyemi, 2012).

Table 2: Perceptions of Respondents on effects of petrol scarcity on their income

Petrol Scarcity	Income		
	Before the Scarcity	During scarcity	Total
High	177 (70.1%)	32 (12.7%)	209(83.3%)
Low	15 (6.0%)	27 (10.8%)	42 (16.7%)
Total	47 (18.7%)	204 (81.3%)	251

Source: Author's Field Survey

A look at table 2 revealed a larger number of the respondents (70.1%) in agreement with a high level of their income, before the scarcity, as compared to those whose income rose (12.7%) during the same period. Again, when referring to the question of law level of income, as against the improved level (second row), about 27 (10.8%) acknowledge low income before the period of scarcity and only 25 (6.0%) accepted having low income during the scarcity of the products. In other to further statically confirm the finding above, Yule's Q statistical parameter is utilized:

Yule's Q statistical parameter is given thus:

$$Q = \frac{AD-BC}{AD+BC}$$

Where the expected values are represented in the form of ABC and D, and the actual value is denoted by 'Q'.

$$Q = \frac{(21 \, x \, 15) \quad - \quad (177 \, x \, 27)}{(21 \, x \, 15) \quad + \quad (177 \, x \, 27)}$$

$$= \frac{480 \quad - 4779}{480 \quad + 4779}$$

$$= - \frac{4299}{5259}$$

$$Q = - 0.82$$

The results obtained from the Yule's Q statistical parameter test indicates that, there is a very strong negative (-) association between petrol scarcity and income. Petrol scarcity is inversely proportional to the level of income of commercial motorists in the state. By implication, the higher the scarcity of the product, the lower the income of the motorists studied and vice versa.

Test of Hypotheses

The hypotheses to be tested in this study are stated thus:

H_{o1}: incidence of petrol scarcity does not have significant effect on daily income of commercial motorists in Kaduna Metropolis

H_{o2}: incidence of petrol scarcity does not have significant effect on Work-stress experience of commercial motorists in Kaduna metropolis

Table 4: Summary of Regression Test of effect of the incidence of petrol scarcity on daily income of commercial motorists in Kaduna Metropolis

Variables	Co-efficient	Standard Error	t-statistics	P-value
Constant	0.109	0.72	1.519	0.130
Incidence of petrol scarcity	0.512	0.132	3.882	0.000
R square: 0.864	No of observation: 251			
Adjusted R square: 0.861	R: 0.930			
F-statistics: 302.277				

Source: Author's Computations using SPSS statistical package

Judging from the statistical results in table 4, it is shown that incidence of petrol scarcity has significant effect on daily income of commercial motorists in the study area ($R^2 = 0.864$) with a coefficient of 0.512 at 0.05 level of significance. The marginal effect reveals that Incidence of petrol scarcity is effective in determining the level of daily income of commercial motorists in Kaduna metropolis. In other words, the implication of the result is that, the higher the incidence of petrol scarcity, the lower the income level of commercial motorists in the metropolis and the lower the incidence of petrol scarcity, the higher the income level of commercial motorists in the area.

Table 5: Summary of Regression Test of effect of the incidence of petrol scarcity on experience of work-stress by the commercial motorists

Variables	Co-efficient	Standard Error	t-statistics	P-value
Constant	0.678	0.113	5.932	0.000
Incidence of petrol scarcity	0.181	0.211	0.844	0.391
R square: 0.721	No of observation: 251			
Adjusted R square: 0.719	R: 0.791			
F-statistics: 71.993				

Source: Author's Computations using SPSS statistical package

Table 5 is used to examine the effect of the incidence of petrol scarcity on work-stress experience of commercial motorists in Kaduna metropolis. It could be deduced from the table that the incidence of petrol scarcity has significant effects on work-stress experience of commercial motorists in the metropolis ($R^2 = 0.721$). This finding implies that the incidence of petrol scarcity has significant effect of work-stress of commercial motorists in Kaduna metropolis. This practically means that petrol scarcity usually makes the commercial motorists experience stress (probably physical and mental in the process of carrying out their daily work

Discussion of Findings

It becomes of utmost importance to discuss the research findings in relation to its previously identified objectives.

On the first objective, which examined the patterns that petrol scarcity takes in the study area, the findings revealed that the general public view was that: hoarding and price hike by the retailers, lack of supply from the source and strike by tanker drivers constituted the major picture of petrol scarcity in Kaduna metropolis.

On the second objective, which aimed at ascertaining on the dynamics of quality of life among commercial motorists in Kaduna metropolis, the findings revealed that, a great number of the respondents have agreed that the effects of the incidence of petrol scarcity is far-reaching, mainly in terms of loss of income and man-hour loss, resulting from long queues at the service station.

On the third objective, which also aimed at finding out how the incidence of petrol scarcity affects quality of life of commercial motorists in the study area, the result of regression test has indicated that the incidence of petrol scarcity is in inversely proportional not only to the levels of the motorists' income, but also to their conditions of quality of life. By implication, the study found out that, the higher the incidence of petrol scarcity the lower the levels of motorists' income and their resultant quality of life and vice versa.

Furthermore, majority of the respondents have agreed to a feeling of low quality of life, as reflected by their loss of income and their experience of work-related stress during the periods of petrol scarcity.

5. Conclusion and Recommendations

Having investigated the incidents of fuel scarcity and its effects on quality of life of the people of Kaduna Metropolis, the following major conclusions were made:

Demographically, males constituted the total percentage (100%) of the people engaged in transportation in Kaduna; the level of fuel consumption is quite high, hence demand had always outstripped supply, the effects of fuel scarcity are far-reading, mainly in terms of loss of income physical and mental stress and man-hour loss resulting from long queues at the service stations. On the patterns of the scarcity in question, majority of the respondents were of the view that lack of fuel at the services station is the major cause of the problem those who believed that hoarding and price hike in the black market, as the cause of petrol scarcity, are higher than those whose views about the cause is in terms of strike by tanker drivers. This study therefore combines the three points of views as the dominant causes of petrol scarcity in Kaduna metropolis. That is to say, lack of petrol at the filling stations is one of the major realities surroundings phenomenon of fuel scarcity, followed by hoarding and price hike by retailers and the last being strike by tankers drivers.

After observing the trend to the situation of petrol scarcity and quality of life, it is recommended that certain factors be given priority on future studies. These include:

i. Collecting data on a time series, since fuel scarcity is both perennial and sporadic, in order gain a more and deeper understanding of the phenomenon;
ii. Carrying out similar studies elsewhere in the country to give room for comparative analysis and,
iii. Employing more powerful analytical techniques in testing the hypotheses that may be proposed.

Finally, the study ended by proposing some possible solutions to the problems of perennial petrol scarcity in the given community. First, there should be extensive improvement in both the quantity and quality of petroleum distribution networks so as to overcome the problem of excess demand over supply of the products. Second, our overdependence on imported refined products should be checked in high proportion. Local refining of petroleum products is the only viable way of ensuring uninterrupted supply of fuel in the country as a whole, and Kaduna state in particular. Efforts should be made not only to repair the existing refineries, but also ensure the construction of new ones. By so doing, the problems of lack of petrol at the service stations, hoarding and price hike in the black market and strike by tanker drivers may surely cease to exist.

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National Fadama Development Project (III) Implementation and the Target Class: Evidence from Abuja Area Councils

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Abstract

This article employed a descriptive Statistical technique to investigate the level of reaching out to the primary target class in terms of Implementation of the National Fadama Development Project III in Abuja Area Councils. We used primary data collated from 114 respondents via a structured questionnaire to the Fadama User Groups (FUGs) in Abuja. The level of reaching out to the primary target class as enshrined in the Project Implementation Manual (PIM), 2009 was scrutinised through the examination of the socio-economic characteristics of the respondents from the Fadama III project users in Abuja. Findings from the results showed that, the project was able to achieve its objective as the primary target class were the real beneficiaries of the National Fadama Development Project III intervention activity in Abuja Area Councils. Sustainability in terms of implementation approach was recommended therefore and, its broad extension to cover the entire poor and the rural poor in particular for the achievement of poverty eradication, food security and economic empowerment.

Keywords: Fadama, Development Project, Target Class
JEL Codes: M29

1. Introduction

According to the Brookings Institution report of 2018 tagged narrative of "future of development", extreme poverty in today's world is largely about Africa. In a similar account, a new report by the World Poverty Clock shows Nigeria has overtaken India as the country with the most extreme poor people in the world even though India has a population seven times larger than Nigeria's. Over seventy (70%) of the population is classified as poor, with over 35% living in absolute poverty (IFAD 2013). Poverty is especially severe in rural areas, where social services and infrastructure are limited or non-existent. The 86.9 million Nigerians now living in extreme poverty represents nearly 50% of its estimated 180 million population. As a consequence, the mission to end extreme poverty globally is already at risk (Yomi K., 2018). The great majorities of those who live in rural areas are poor and depend on agriculture for food and income. Most of the country's food is produced by small scale farmers cultivating tiny plots of land and, who are depended on rainfall rather than modern irrigation systems. Surveys by the National Fadama Development Coordinating Office as cited in the volume two of its Project implementation Manual (PIM) of 2009 shows that across the country, 44% of male farmers and 72% of female farmers cultivate less than one hectare per household. Women play a major role in the production, processing and marketing of food crops. The poorest groups eke out subsistence but often go short of food, particularly during the pre-harvest period. A high proportion of rural people suffer from malnutrition, and other diseases related to poor nutrition.

Indeed, women and residents headed by women as cited in Alberto V. et al (2011), are frequently the most chronically poor within rural communities. Women have lower social status than men and subsequently less access to schooling and training. Yet women play significant roles in rural economic activities. While the number of men migrating from rural areas in search of employment has increased over the last decades, the number of residents headed by women risen substantially. Women struggle to cope as the burden of work at home and in the fields fall on their shoulders. Malnutrition is a frequent problem in these residents.

Other vulnerable groups among rural poor are young couples with children, the disabled and old people with no relatives to support them (PIM, Vol. 2, 2009). Rural Poverty tends to evenly distributed across Nigeria rather than concentrated in specific geographic areas (Omoniyi, 2013). However, in some zones the poverty situation threaten to worsen considerably, such as in the northern part of Nigeria and, especially the north-eastern zone where also severe insecurity threatens. Also due to environmental degradation, the fishing communities living in the mangrove swamps and along the Atlantic coast are among the poorest in the country.

However, despite the worse poverty levels in the rural areas, projects and programmes of governments and other international and local development partners usually tends to be diverted away from the target beneficiaries, thereby making a nuisance of its entirety and impossible to achieve targets, (Anyanwu, 2004). The National Fadama Development Project III is one of those numerous government and International development partners intervention programmes aimed at Poverty Alleviation and food security in Nigeria, targeted at the poor and rural poor in particular. In this study, an attempt is made to investigate, if the actual beneficiaries were the targeted class as described by the Project Implementation Manual (PIM, 2009); to include the target groups of the rural poor engaged in economic activities (farmers, pastoralists, fishermen, nomads, traders, processors, hunters and gatherers as well as other economic interest groups) and; Relatively disadvantaged groups (women including widows) such as the handicapped, the sick including people living with HIV/AIDS, and the youth.

Fadama I and Fadama II focused basically on provision of irrigation and other farm infrastructural facilities for crop production, even though non farmers were also among the Fadama users, such as vulnerable groups among others. The Fadama III project thereafter is a follow-up to Fadama II and is designed to raise the production level and efficiency of Fadama users and accordingly their income. Fadama III project, is a comprehensive five-year action program developed by the Federal Ministry of Agriculture & Water Resources (FMAWR) in close partnership with the Federal Ministry of Environment (FME) and other federal and state government ministries, local governments and key stakeholders (PIM 2009, Vol. 1). The Fadama III is more of agricultural diversification program, providing financing for the diverse livelihood activities which the beneficiaries themselves identify and design, with appropriate facilitation support.

The major development objectives of the Fadama III Project are to increase the income of users of rural land and water resources on a sustainable basis. By increasing their income, help reduce rural poverty, increase food security, attainment of a key Millennium Development Goal (MDG) and contribute to the economic empowerment of Fadama users.

The problem of our interest is that in Nigeria, poor implementation of poverty eradication and alleviation programs and interventions, in terms of diversion of resources away from the targeted class of the poor has been identified as a major draw-back to the achievement of the primary objective of the programs. Studies identified diversion of resources as a major constraint to the achievement of rural poverty alleviation and food security programs. As cited in Ogwumike (1998) and Kankwenda et al (2000) that, government initiated interventions were all affected by the common problem of resources not pretty reaching the main targets of the various initiatives.

Reasons for Poor results or gross failure of government and international intervention efforts with regards to poverty alleviation, food security, and micro economic empowerment is often attributed to diversion of resources by officials, rather than judiciously applying resources to the real target primarily meant for, its often diverted away for political, social or personal interests. However, there has not been any scientific investigation on this matter with regards to the National Fadama Development Project (III). The objective of this study is to investigate the level of Fadama III implementation in reaching out to the primary target class, the rural poor as identified in the Project Implementation Manual (II) of the National Fadama Development Project (2009).

Our main object here is to investigate the level of Fadama III implementation in reaching out to the primary target class, the rural poor, as identified in the Project Implementation Manual (II) of the National Fadama (III) Development project.

To achieve our objective, this article is organized to give the background of the study, problem

statement, and justification in the first section, literature review and methodology in the second and third sections respectively, section four presents the analysis and discussion of results, and our conclusion on the study.

2. Literature Review

There is a considerable amount of research on the interventional policies and activities on poverty alleviation, eradication and food security issues by the Government and its development partners. Majority of these researches examine the effect of such policies on the poverty alleviation, efficacy constraints and challenges in both rural and urban sectors of various economies. A lot of these studies however identified diversion of resources and or wrong targeting of beneficiaries as a major drawback to the achievement of policy goals (Emmanuel, 2002).

Poverty Alleviation strategies in Nigeria examined under the three broad eras of the Nigerian economic history as cited in Ogwumike, 1987, 1988 and 2001, also as cited in (Muktar, 2001), were all found to be associated with a common constraint of diversion of resources from their primary target or beneficiaries. These are the eras of period before the Structural Adjustment Programme (SAP), Structural Adjustment Programme period and period under the Democratic rule.

In the first era, the forth national development plan appeared to be the first plan with a precise focus on objectives that are associated with poverty reduction, emphasised increase in real income of the average citizen as well as reduction in income inequality among other things. During this era, many of the programmes (either wholly Government or in association with International Agencies) targeted poverty alleviation including; the River Basin Development Authorities (RBDA), the Agricultural Development Programme (ADP), the Agricultural Credit Guarantee Scheme (ACGS), the Rural Electrification Scheme (RES), and the Rural Banking Programme (RBP). Mostly were designed to take care of enhancing agricultural output and income among others. Despite some significant degree of success made, most of them could not be sustained due resource leakage and diversion from the original focus. For instance, according to Ogwumike (1998), the Rural Banking and the Agricultural Credit Guarantee Scheme at many stages failed to deliver the desired credit for rural agriculture and rural transformation because a lot of savings were mobilised in the rural areas only to be diverted to urban areas in form of credits/investments.

Other notable poverty reduction related programmes during this era include Operation Feed the Nation (OFN), in 1977, Free and Compulsory Primary Education (FCPE) Green Revolution, 1980, and Low Cost Housing Scheme, both OFN and Green Revolution were targeted at agricultural output could not achieve sustainability due to lack of political will and commitment, policy instability, diversion of resources and insufficient involvement of the beneficiaries in these programmes (CBN, Enugu Zone, 1998).

During the Focused policy attempt by government towards poverty alleviation, the Structural Adjustment Programme (SAP) era, many interventions were designed and implemented by government between 1986 and 1993. Also under the guided deregulation of the period 1993 to 1998, whereby more poverty reduction programmes were implemented including; Directorate for Food, Roads and Rural Infrastructure (DFRRI) 1986, the National Directorate of Employment (NDE) 1986, Better Life Programme (BLP) 1987, Peoples Bank of Nigeria (PBN) 1989, Community Banks (CB) 1990, Family Support Programme (FSP) 1994, and Family Economic Advancement Programme (FEAP) 1997.

According to Ogwumike (1998), as cited in the Emmanuel, (2002) and also Oyesanmi, O. et al (2005) The Better Life Programme (BLP) which was mostly gender biased, meant to improve the life and incomes of rural women among other objectives, was hijacked by position seeking individuals leading to its failure. The resources were used for personal aggrandizement of other individuals aside the target class and rather than for the set objectives. As such it was more rhetoric than pragmatic in its objectives. Family Support Programme (FSP) the successor of the BLP was also beset by the same problems suffered by its predecessor, and so could not achieve its objectives. Similar faith among other factor including poor implementation of projects, corruption by officials etc, militated against the sustainability and success of other similar programmes afore mentioned.

Moreover, under the Democratic era, several interventions aimed at job creation, income generation and poverty alleviation/eradication were

initiated including, the National Poverty Eradication Programme (NAPEP), 2001 and the National Fadama Development Projects, since 1992. The target of NAPEP was to completely eradicate poverty by the year 2010. Three stages were identified for the attainment of the target including, the restoration of hope in the poor through provision of basic necessities, restoration of economic independence and confidence and, wealth creation. As observed by Omoniyi et al (2013), the lack of consideration of socio political environment and lack of participation of target beneficiaries were among other constraints of NAPEP towards achieving its laudable objective of poverty eradication.

For the Fadama projects, whose funding is sourced from all the tiers of government, the World Bank and other development partners, is structurally executed in phases; Fadama I (1992 to 1999), II (2000 to 2007) and III (2009 to 2013) projects. The word "Fadama" as cited in Akinola and Atala, (2004) is a Hausa word, meaning the "seasonally flooded or floodable plains along major rivers and or depressions on the adjacent low terraces". These areas can adequately be used to grow crops in the dry seasons because of their rich hydromophous nature. In Oriola's (2004) view; this is similar to cultivating river beds adjacent to rain-fed farms. Ultimately, the Fadama land farming and the use of irrigation facilities have developed into a close relationship armoured by the needs for food security throughout the year and, to eradicate poverty and achieve economic empowerment.

3, Methodology

For the purpose of the execution and administration convenience of the Fadama III project, the Federal Capital Territory was divided into nineteen (19) areas, called the Fadama Development Areas (FDAs), by the Abuja Fadama Projects Coordinating Office. The population for this study therefore consists of all the nineteen FDAs which is composed of the given number of one thousand and eighty three (1,083) Fadama User Groups (FUGs) fairly distributed across the FDAs, with each FUG having fifteen (15) Fadama Users in a group. Therefore, making up a total population of sixteen thousand, two hundred and forty five (16,245) Fadama III Users in the Abuja Area Councils of the Federal capital Territory.

The study uses the random sampling technique to arrive at the desired sample size. This technique is adequately applicable since the accurate number of the FUGs as well the actual Fadama users is obtainable. Therefore, all Fadama users from the nineteen areas referred to as the Fadama Development Areas (FDAs) have equal chance of being selected and all respondents come from the One thousand and eighty three (1,083) Fadama User Groups (FUGs) of the National Fadama Development Project III. The random identification of participants is therefore conserved from the FUGs within these FDAs from which the research instrument is administered.

Since the entire targeted population of Fadama Users cannot be used for the study, samples are selected from it to reflect the entire situation. The target sample is therefore arrived at by using the Taro Yamen (1969) proportionate sampling formula.

The total population as derived from the FDAs is twenty one thousand, six hundred and sixty (21,660) people, the confidence interval adopted is 90% (0.1 significance level). 90% confidence interval is selected in order not to over minimize the margin of error. Therefore, substituting for the desired sample size (n) from the Taro Yemene (1967) proportionate sampling formula above, n is obtained as; 99.5

Given that we have nineteen FDAs to cover, the 99.5 participants will be distributed across the total number of the FDAs to give us 5.23. Therefore since we are dealing with individual persons such number is rounded up to six (6) respondents from each Fadama Development Area (FDA). Therefore, six (6) participants are selected from each of the nineteen (19) FDAs to make a total number of one hundred and fourteen (114) respondents.

4. Results and Discussion

To examine the appropriateness of attending to the real Fadama III target class, the socio-economic characteristics of the beneficiaries of Fadama III in Abuja Area Councils is examined.

Results from the questionnaire are therefore here analytically described in tables and charts drawing out the descriptive Statistics.

Table 1: Gender Distribution of Respondents from the Fadama III Users

Sex	Frequency	Percentage	Cumulative
Male	78	68.42	68.42
Female	36	31.58	100.00
Total	114	100.00	

Source: Field work, 2016

The results from Table 1 indicate that there were 114 respondents. The results show that among the respondents, 68.42% were male, while 31.58% were female. The implication is that the study is not gender bias, as both sexes have been considerably represented. Furthermore it goes to show that the beneficiaries of FADAMA III cut across the male and female sexes. Thus, FADAMA III is not gender bias.

The gender distribution of Respondents from the Fadama III users is further illustrated by chart 1

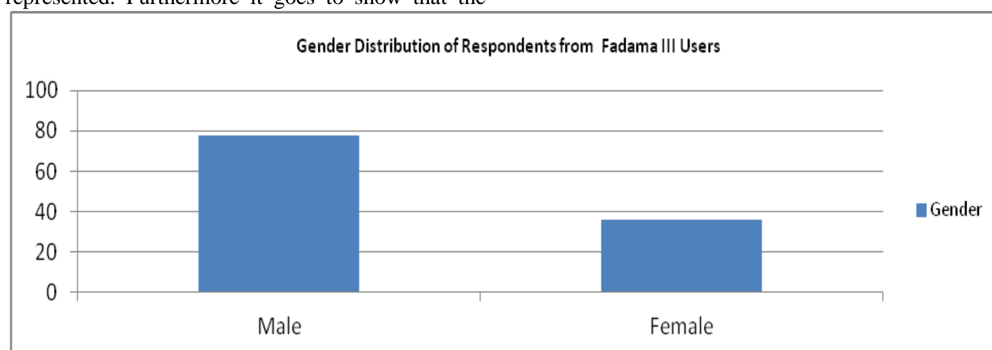

Chart 1: Gender of Respondents from the Fadama III Users
Source: Field work, 2016

On the age structure of the respondents to the field instrument, Table 2 presents the statistics. Four age categories are used for this purpose; (18 - 30, 31 - 45, 46 – 60, 61 and above).

Table 2: Age Structure of Respondents from Fadama III Users

Age	Frequency	Percentage	Cumulative
18-30	14	12.28	12.28
31-45	65	57.02	69.30
46-60	27	23.68	92.98
61+	8	7.02	100.00
Total	114	100.00	

Source: Field work, 2016

From Table 2 it can be seen that most of the Fadama users were mainly of the productive employment age of 18 to 60. 14 of the Fadama III users were of age range of 18-30, 65 were of the age range of 31-45; 27 of the participants are of the age range 46-60 and, only 8 of the Fadama users in the Table 2, were of age above 60. That represents a percentage contribution of 12.28% for group age 18 - 30 and, 57.02%, 23.68% and 7.02% respectively for the other groups in that range. The information deduced from table 2 indicates that 92.98% of the fadama III users are of active productive age of 18-60. Therefore, it is an indication that the respondents were well sampled for the study. Considering that all the respondents were adults gives credibility since their responses can be relied upon.

Further insight into the age structure of respondents from Fadama III users is provided in Chart 2.

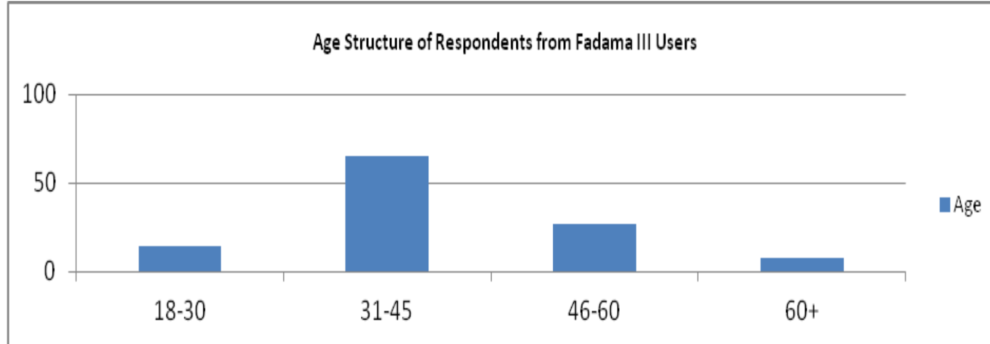

Chart 2: Age Structure of Respondents from the Fadama III Users
Source: Field work, 2016

With respect to the educational attainment of the respondents, Table 3 reveals the statistics on this aspect.

Table 3: Educational Qualifications of Respondents from Fadama III Users

Education	Frequency	Percentage	Cumulative
Primary	32	28.07	28.07
Secondary	64	56.14	84.21
Tertiary	4	3.51	87.72
Informal/Non	14	12.28	100.00
Total	114	100.00	

Source: Field work, 2016

Data from Table 3 depicts the educational qualification attained by the various respondents drawn from among Fadama III users during the study period. The information indicates that 32 of them held the formal basic or primary education, representing about 28.07% of the Fadama users. 56.14% of the people held the Secondary level of formal education, 3.51% of the 114 respondents attained a tertiary level of formal education and, 12.28% were either educated in the informal methods or are have no education at all. The Statistics implies that with 87.72% of the respondents having at least a primary level of formal education, the respondents can give enlightened responses. Furthermore, the level of education among the Fadama III users indicate that communication, training as well as record keeping and appreciation are enhanced. This educational qualification variance among the Fadama III users is further indicated by Chart 3 below.

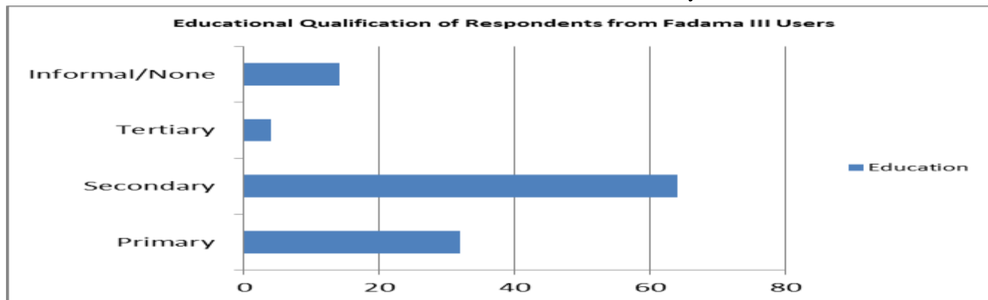

Chart 3: Educational Qualification of Respondents from the Fadama III Users
Source: Field work, 2016

Table 4: Marital Status of Respondents from Fadama III Users

Marital Status	Frequency	Percentage	Cumulative
Married	92	80.70	80.70
Not Married	22	19.30	100.00
Total	114	100.00	

Source: Field work, 2016

The data from Table 4 indicates that 80.70% of the respondents are married men and women and, 19.30% which is similarly were found to be otherwise. This implies that reasonably responsible accurate information can be deduced from the respondents of Fadama III project. This gives credence to the results obtained. Chart 4 further provided more insight into the marital status of the respondents.

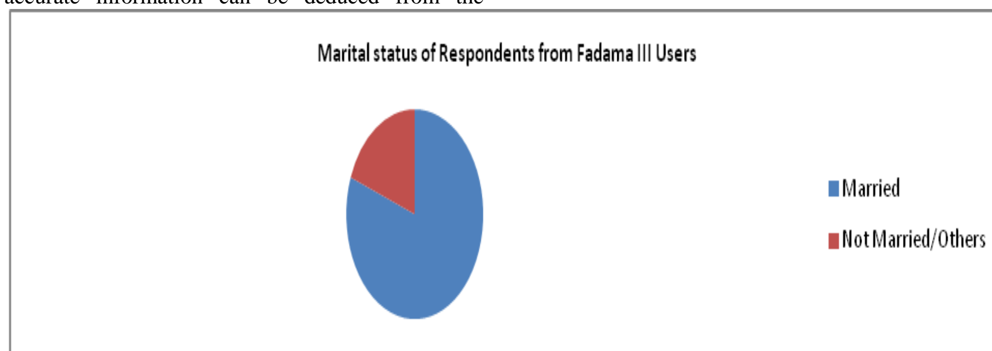

Chart 4: Marital Status of Respondents from the Fadama III Users
Source: Field work, 2016

Table 5: Number of Dependents of Respondents from Fadama III Users

Dependents	Frequency	Percentage	Cumulative
Less than 5	31	27.19	27.19
5 - 10	70	61.40	88.60
11 – 11+	9	7.89	96.49
None	4	3.51	100.00
Total	114	100.00	

Source: Field work, 2016

Table 5 shows that 27.19% of the respondents from the Fadama III users had less than 5 dependents representing about 31 respondents. 61.40% Fadama users of the respondents had between 5 to 10 dependents under them, 7.89% of the respondents had at least 11 or more dependents under them and, 3.51% of the 114 respondents which is symbolized as “none” in the table had no dependent at all. The data indicates that 96.49% of the respondents had at least one dependent or more.

The class distribution in terms of level of dependants’ responsibility upon the Fadama III users is indicated by Chart 5 below.

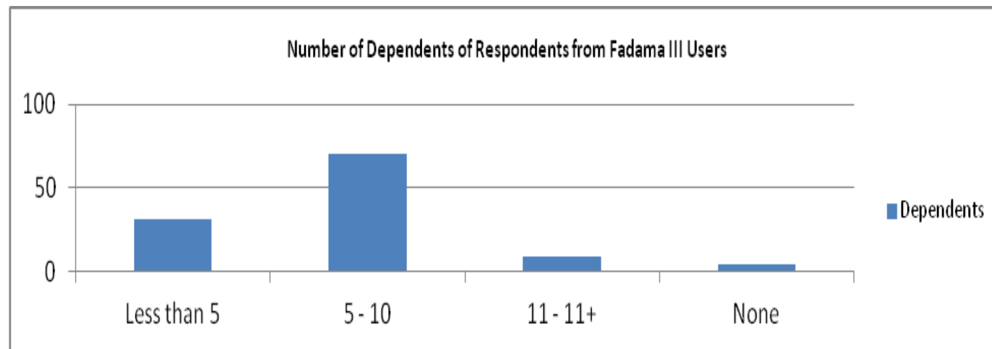

Chart 5: Dependency Responsibility on Respondents from the Fadama III Users
Source: Field work, 2016

On the years of farming experience of the respondents, Table 6 reveals the scenario of various years of experience.

Table 6: Years of Farming Experience of Respondents from Fadama III Users

Years of Experience	Frequency	Percentage	Cumulative
1 – 4	1	0.88	0.88
5 – 10	18	15.79	16.67
11 – 15	52	45.61	62.28
At least 16	43	37.72	100.00
Total	114	100.00	

Source: Field work, 2016

Table 6 above indicates that only about 0.88% of the total respondents, denoted as 1 had less than 5 years of farming experience, 15.79% of the entire respondents had between 5 to 10 years of experience. Of the total respondents 45.61% of them had 11 to 15 years of farming experience, and 37.72% of the respondents had a farming experience of at least 16 years and above. This implies that the respondents are capable and experienced farmers that can easily utilize the Fadama III project to maximum benefit. Chart 6 shows the trend of the relationship that exist between age bracket (in years) and engagement of Fadama III activity of respondents.

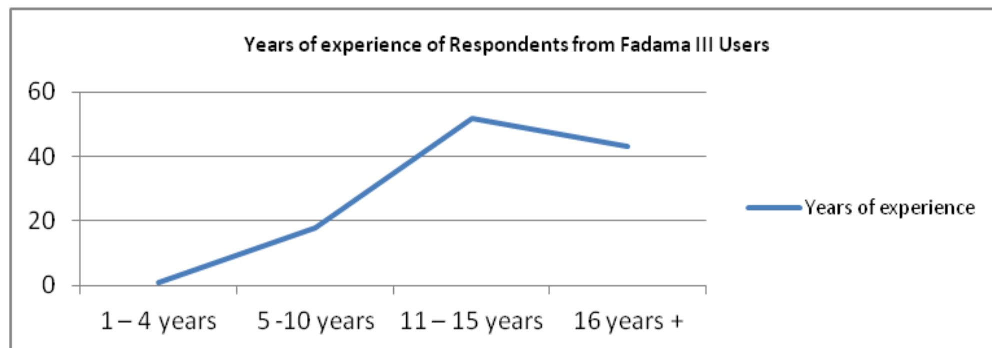

Chart 6: Farming Experience of Respondents from the Fadama III Users
Source: Field work, 2016

Table 7: State of Origin of Respondents from Fadama III Users

State of Origin	Frequency	Percentage	Cumulative
Abuja Indigenes	103	90.35	90.35
Non Indigenes	11	9.65	100.00
Total	114	100.00	

Source: Field work, 2016

From table 7, 90.35% Fadama users are indigenes of the FCT, while 9.65% of total respondents are non FCT indigenes, also denoted as 2. The Statistics showed that Fadama III project surely targeted the grass roots and is indigenous biased. This could be accounted for by the fact more of the indigenes are into agriculture since they have relatively better access to land than non- indigenes.

Clearly, the descriptive statistics of the beneficiary show that Fadama III users cut across both sexes, across all the age groups,; with the beneficiary having attended different levels of education; and of different marital status; as well are from different places. This goes to show the relative absence of bias in the process aimed at empowering the rural dwellers in the councils. This is further illustrated by Chart 7 on the respondents' classification by state of origin basis**.**

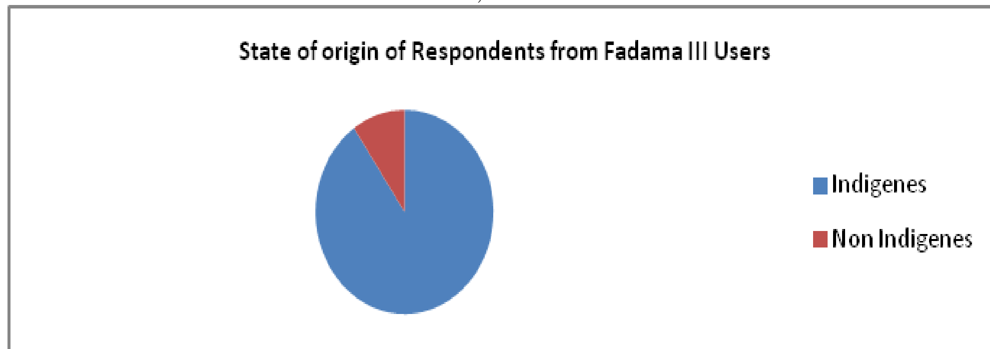

Chart 7: Respondents' State of Origin from the Fadama III Users
Source: Field work, 2016

Table 8: Challenge of inadequate Farm Tools

Farm Tools Adequacy	Frequency	Percentage	Cumulative
Inadequate	86	75.44	75.44
Adequate	28	24.56	100.00
Total	114	100.00	

Source: Field work, 2016

The analysis on Table 8 reveals the classification of farm tools adequacy among the Fadama III Users in the rural areas of Abuja area councils. Respondents who felt farm tools were inadequate to achieve their objective constitute 75.44% of total respondents. The second category farmers hold that farm tools were adequate. This set of 28 Fadama users constitutes 24.56% of the total respondents. The data therefore indicates that most Fadama users, over 75% of respondents had inadequate farm tools and apparently it was a fundamental challenge and a constraint to growth and economic empowerment. Chart 8 revealed that most respondents from the Fadama III users had inadequate working tools.

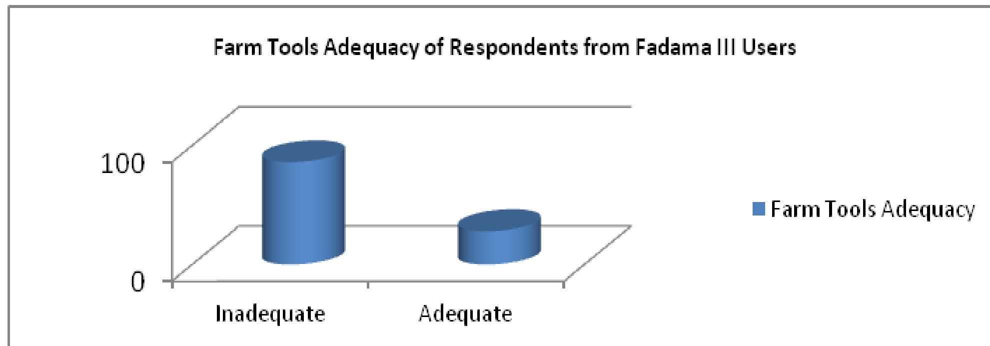

Chart 8: Farm Tools Adequacy of Respondents from the Fadama III Users
Source: Field work, 2016

Table 9: The Nature of Output Limiting Factors

Limiting Factor	Frequency	Percentage	Cumulative
Economic	96	84.21	84.21
Social	3	2.63	86.84
Political	3	2.63	89.47
Others	12	10.53	100.00
Total	114	100.00	

Source: Field work, 2016

From Table 9 presents the general nature of output limiting factors faced by Fadama Users. Economic factors such as farmland ownership, agricultural inputs (fertilizer, seedlings, Processing Machines, Storage facilities etc) is dominant for most Fadama Users. Farmers who identify this as a challenge constitute about 84.21% of the respondents. Socio-political factors such as family and community land ownership conditions and rights, jointly constitutes 5.26%. Miscellaneous/Other factors limiting output such as theft of produce constitutes about 10.53% of the respondents. In essence, the analysis shows that economic factors are mostly responsible for limiting the ability of respondents to expand or maximize the required output, increase income, accumulate farm related and non-related assets and, achieve economic empowerment. This is represented by chart 9.

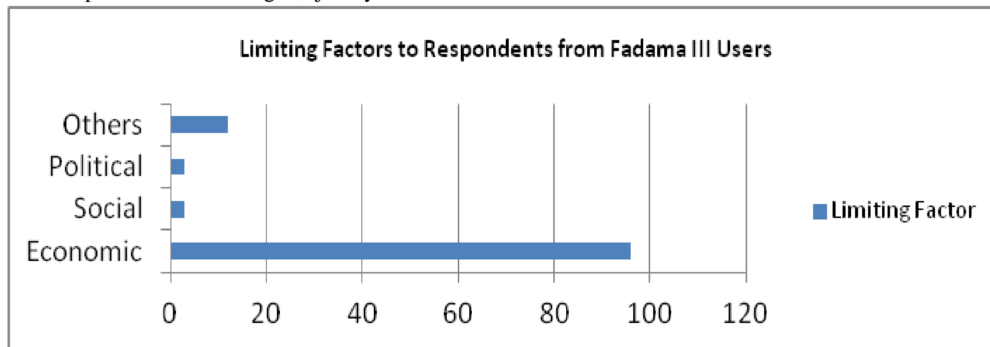

Chart 9: Ability Limiting Factors of Respondents from the Fadama III Users
Source: Field work, 2016

Another challenged considered in the study is that of farmland ownership. This analysis of this challenge is presented on Table 10.

Table 10: Challenge of Farm Land Ownership

Farmland Ownership	Frequency	Percentage	Cumulative
Owner	54	47.37	47.37
Non Owner	60	52.63	100.00
Total	114	100.00	

Source: Field work, 2016

Results from table 10 reveals the structure of farm land ownership of respondents and the extent of challenge it imposes on the achievement of Fadama III primary objective of economic empowerment. Farmers that own their farm land represents 47.37% of the respondents, while, conversely farmers who do not own the farm land they use represent 52.63% of the respondents. The statistics implies that more than half of Fadama III users do not personally own their farm which is a major input in agricultural practice. Therefore farm ownership poses a significant challenge to the realization of Fadama III objective. Chart 10 clearly indicated the extend of farm land ownership among the Fadama III users.

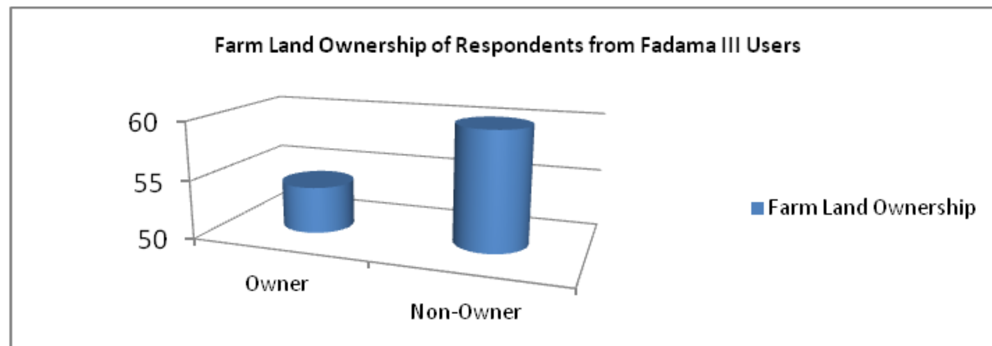

Chart 10: Farm Land Ownership of Respondents from the Fadama III Users
Source: Field work, 2016

5. Findings and Conclusion

Findings

From the findings in table 1, the beneficiaries of FADAMA III cut across the male and female sexes, with 68% males and 32 per cent females, the users of the project is thus fairly gender unbiased. The project users are mainly composed of youth with 57% within the age of 31 to 45 as is seen from chart 2. Chart 3 expressed that 56% were educated at secondary level, but only about 4% at the tertiary level indicative of only basic literacy level among the beneficiaries of Fadama III. Results also shows that over 80% of Fadama users were responsibly married members of the society with a relatively high dependency levels of over 61% of beneficiaries carrying between 5 to 10 dependents, as shown by table and chart 5. Respondents were mostly not first timers as almost half of the respondents had between 11 to 15 years of farming experience as depicted in chart 6 and, from table 7, over 90% of them are indigenous, that is the project beneficiaries are originally from the FCT. 75% of respondents revealed that their farm tools are inadequate and 84% said the output limiting factors are economic in nature, as buttressed in charts 8 and 9 respectively. Table 10 shows that about 53% of respondents do not own the land wherein their activity is based.

Therefore from the fore-going, it is apparent that Fadama III users from Abuja Area Councils were mostly men and women, non-land owners, engulfed by poor farm implements due to economic related factors. Respondents were also mostly family heads with very high levels of dependants, characterised by low level of education and predominantly youths populace of Abuja origin.

Conclusion

From the precise description of the rural poor as cited in Alberto Valdés, et al (2011), rural poor households have more members, a higher share of dependents, less education, less land ownership, a greater number of working age adults and often engage in on-farm activities as a source of livelihood. Consequently, from this study, it is

evident that Fadama III has appropriately engaged the real class of the rural poor in the implementation of the project as intended, thereby significantly nullifying the usual constraint of misplacement and diversion of resources in the implementation of poverty alleviation/eradication and economic empowerment intervention projects and programmes. It is recommended that the project be sustained with the same implementation style, higher momentum and extended to cover the entire rural population of Nigeria for a decisive action on poverty eradication, food security and economic empowerment.

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Appraising Gary Hamel's Future of Management – Any Relevance for Small Businesses?

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Abstract

Management theory and practice in the 20th Century is one of predictability, accountability, prescription and little has changed over time. New theories have emerged but they are all founded in the boundaries, barriers, and traditional views of Boards decide, Management manages, Employees do cycle of old theories. Hence, modern management practice is based on a set of principles whose origins date back a century or more. Such practices include specialization, standardization, planning and control, hierarchy, and the primacy of extrinsic rewards. Generations of managers have mined these principles for competitive advantage in various forms, and large variation of results has been put forward. However, after decades of digging, the chance of discovering a gleaming piece of new management wisdom in these well-explored arenas is far-off. Managers' challenge therefore is to uncover unconventional principles that open up new layers of management innovation. This paper has systemically reviewed Gary Hamel's book – the Future of Management and its relevance to small and medium enterprises. It has been argued that management innovation is an important phenomenon in the field of management and that the generative mechanisms through which it occurs (i.e., management innovation processes) can be applicable for small business operational efficiency.

Keywords: Management, Management Innovation, Management Theory, Managers, SMEs
JEL Codes: O32

1. Introduction

Management or the act and science of managing resources to actualize set goals has been continuously revolving. Evidences are bound that right from the time of early management scholars such as Fredrick Taylor, Henry Fayol and the likes till date management has witnessed several dynamics and spontaneous developments. Over the last few decades, scholars around the world have produced a vast body of academic research and writing on management strategies and innovation. While most of this authors and scholars have focused on various aspects of technological innovation (e.g. Utterback, 1994; Granovetter, 2001), the trend over the last couple of years has been toward exploring other forms of innovation, such as process innovation (e.g., Pisano, 1996), service innovation (e.g., Gallouj &Weinstein, 1997), and strategic innovation (Hamel, 1998), with a view to understanding how they are managed and how they contribute to long-term firm success and growth.

The Book – 'the Future of Management' as the name entails demonstrates how the real fuel for global competitiveness and long-term business success are never dependent on old management styles and principles, operational excellence, technology breakthroughs or even new business methods. Bearing this in mind that sooner or later, competitors will arrive who have superior operations, next-generation technology or even better business models. Instead, according to the book, the key to sustaining a long-term business success and global dominance is management innovation. In the Book, the author explains why it is time to imagine the future of management and become an active participant in the process of inventing a successful management practice that can accommodate the challenges of tomorrow. The book presented a systematic view about how business

owners and entrepreneurs must develop organizations that are ready to compete in the future and that addresses professional, emotional and ever-changing lifestyle needs in the marketplace through reinventing the management process.

More so, Hamel maintains that even with the innovations of last century such as modern medicine, electric motors, plastics, telephone, television, gene sequencing, the internet and GPS among others; the single most essential invention of the century is management. Albeit, management – as essential and powerful as it is, people often do not generally think about management as invention but as a mere tool of resources mobilization and conversion to end products. It is maintained that there is a need to position management as invention so as to derive the best from evolving nature of management. Therefore, the book positioned that there is a need to reinvent management, because organizations due to increasing volatile business environment are facing many challenges that they never faced years ago.

Foundation of the Book

The author – Gary Hamel aimed at making the readers realize that though technology has forever changed how companies operate, however, most companies around the world still run according to outdated management rules and conventions created by long-dead management principles and strategies. Management theory and practice in the 20th Century is one of predictability, accountability, prescription and little has changed over time. New theories have emerged but they are all founded in the boundaries, barriers, and traditional views of Boards decide, management manages and employees do. This raises alarm why today's managers are simply following a dogma and why are they in a paradigm trap and why must they not escape from the traditional view of management.

It was further maintained that the pace of change in all aspects of human life in recent years has exponentially and dramatically increased. Human Intelligence and skills are ever changing, changing quicker than technology. In line with the changing nature of the global business environment, organisations increasingly have to change and adapt to new global changes around their environments. Hamel opined that it is time to start managing according to the times rather than to be addicted to the old orders of management principles that are practically not fit into today's business world. The single biggest factor in a company's long-term competitive success is therefore not an extraordinary business model, unique technology or access to huge capital, it's management innovation — a company's ability to strategize, mobilize talented people, and allocate capital in new and different ways. Hence, companies that embrace management innovation will be tomorrow's industry giants.

In the Book, Hamel based his arguments on two major propositions. First, that most management systems and principles are founded on a hopelessly obsolete management paradigm hence the needs for paradigm shift. Second, that management innovation represents the ultimate source of long-term competitive advantage and success and if companies would succeed, they must appreciate and key themselves into it. In addressing these propositions, Hamel attempt not to predict the future of management, but help organizations reinvent it. Accordingly, the aim here is to assist corporate leaders approach the challenge of structuring organizations in a way that gets "more out of people"—thus amplifying human effort—and "then to compound those efforts in ways that allow human beings to achieve together what they cannot achieve individually"—aggregating human effort, the two most fundamental functions of management.

The Old Orders of Management

What is the problem with today's management methods anyway? Management itself has revolved over many centuries. Modern Management which is so dynamic today started right from the era of Fredrick Taylor – Scientific management and Max Webber - Bureaucratic system through talent/strategy management by Michael Porter and innovation management by Gary Hamel and Teresa Amabile. According to the Book, Hamel argued that today's management method emphasize on efficiency, procedures, bureaucracy and coordination, all of which have the power to transform economies but have major constrained of imagination and negate progress.

According to Hamel, these principles are inherited from and revolved round the old management principles, styles, models and methods. And because most CEOs believe in being doers rather than dreamers, the word *innovation* is often relegated to product innovation, strategy innovation, market innovation discussed at shareholder meetings. *The*

Future of Management argues that management innovation matters now because companies are too reliant on yesterday's ideals of control and haste. Instead, managers should focus on the broader objective of furthering human accomplishment. As Hamel demonstrates with several case-study companies, this means funding projects with "long odds" and understanding the difference between data and knowledge.

After the first premise or management changing from the old orders, Hamel's second premise is that management innovation represents the highest and most valuable type of innovation available to the firm. Quoting the examples of GE, Procter & Gamble, Du Pont, Toyota and Visa, he argues that long-term corporate advantage is typically the result of management innovation. It means letting authority flow to those who add value and away from those who don't. Hamel compares the current state of management to that of automotive technology: the major technological advances are long past, and recent decades have seen only minor incremental improvements. Management has evolved to the point of scaling local peaks: Rather than being suspended on top of some accomplishment, it is reclining contentedly on a modest possible change. The challenge as presented to managers by Hamel was that of breaking away from refining the status quo to take a major evolutionary leap onto a new path up a mightier peak.

Hamel views current management practice as being founded on Frederick Taylor's scientific management and Max Weber's principles of bureaucracy, both products of the early 20th century. It was further argued that the pace of technological change and the rise of China and India as cost leaders in goods and services have displaced efficiency as the primary organizational goal. Therefore, if companies could innovate by creating new products or new business models, he asks, why can't they do the same in how they manage organizations? Perhaps a more modern approach to management would be the ticket to keep American companies ahead of their global competitors? This would entail moving from a century-old command-and-control model to a more flexible, networked style of organization. The goals behind most management-innovation efforts generally fall into one of three categories: providing faster organizational renewal, making innovation everyone's job and creating engaging work environments. Notwithstanding the above, Hamel argued, the biggest obstacles to meeting these goals may be the very ideas people already have about management. Hamel eases readers into the process of becoming management innovators by first explaining how "the anomalies" have innovated — that is, how certain companies have been able to "flout conventional wisdom and still run a successful business.

2. Conceptualizing Small and Medium Enterprises

The definition of SMEs changes with time and with the level of economic development in a specific nation (Anamekwe, 2001). This means that a firm that can be regarded as small and medium enterprise in advanced economies such as in the North America, Western Europe and Asia given their high level of capital intensity and advanced technology may be classified as large corporations in developing nations. In the same vein, a large organization in 1970s or 80s may be regarded as medium or small enterprise today. The definition of SMEs therefore becomes relative and varies from institution to institution and from country to country depending on the country's level of development. Akande (2014) looked at SMEs as an enterprise that is self-initiated, largely self-financed, closely self-managed and relatively small in size when compared to aggregate market share in the industry. National Council of Industries (N.C.I, 2009) classified and defined small business as an enterprise with total capital employed of over N1.5 million but not more than N50 million, including working capital but excluding cost of land, or labour size of 11 – 100 workers. While on the other side, a medium enterprise is such with a total capital employed of over N50 million but not more than N200 million, including working capital, but excluding cost of land, or a labour size of 101 – 300 workers.

In recent times, there is an increasing focus on Small and Medium Enterprises (SMEs) as a means of takling the rising scourge of unemployment, particularly among graduates in most developing nations. The SMEs sub-sector is globally acknowledged to contribute substantially in enhancing employment generation, poverty alleviation, equitable distribution of resources, income redistribution, technical and technological innovation, entrepreneurial skills development, more

uniform industrial and economic dispersal, and general improvement in the living standard of the populace within an economic region. More so, they have been publicized as strategic in ensuring food security and encouraging rapid industrialization and reversal of rural-urban migration (Oyekanmi, 2003; Osalor, 2012). Business environment changes on regular basis and as such causes intense competition among SMEs and large corporations (Nwankwo, Kanu, Marire, Balogun & Uhiara, 2014). How to survive and grow in such volatile business environment as caused by political, technological and regulatory change is a major challenge to many operators (Adebayo, 2015). It becomes of utmost essential for SMEs to seek ways to reinforce their competitive position and improve their productivity. As put forward by Gary Hamel, management innovation is a major strategy through which businesses can compete favourably in a volatile business environment.

Innovation is the basis of all competition advantages, the means of anticipating and meeting customer's needs and the method of utilization of technology (Amabile, 2006). In this view, innovation is a process that embraces different characteristics such as change, learning, knowledge and development. In today's competitive markets, innovation implementation at the level of any firm is crucial for achieving economic rewards, competitiveness and sustainability. According to Porter (1990) the success and growth of SMEs is based on its capacity to generate competitive advantage through innovative activities, and, it is frequently determined by pressure and challenge frequently exerted through external agents such as customers, suppliers, competitors and governments. Drucker (1989) viewed innovation as the tool or instrument used by entrepreneurs to exploit change as an opportunity. From Drucker's perspective, systematic (entrepreneurial) innovation consisted of the purposeful and organized search for changes, and in the systematic analysis of the opportunities such changes might offer for economic or social innovation.

On the other side, management innovation at SMEs level is specifically, the discovery and execution of a novel management practice, process, structure, or technique that is intended to further the organizational goals (Birkinshaw, Hamel and Mol, 2009). In this regard, management innovation changes how small and medium business managers do what they do and the only way to change how managers work is to reinvent the processes that govern that work. This involves continuous innovation of management processes such as strategic planning, capital budgeting, project management, hiring and promotion, employee assessment; executive development, internal communications, and knowledge management are the gears that turn management principles into everyday practices. In SMEs, management innovation is more feasible at the operational level - that is, in terms of the generation and implementation of new practices, processes, structures, or techniques because this is the level at which observable changes take place in the way work is done. At the level of SMEs, it is worth reinforcing that management innovation gives conscious attention to the individuals who drive the process.

Why Management Innovation Matters

Hamel in the Book describes management innovation as the invention and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organizational goals. It was further explained that the problem of one hundred years ago was that the established qualities of modern management, control, precision, stability, discipline, and reliability, which are no longer adequate to guide the organizational need in the turbulent global context of today. The major areas of argument against the old management system is that it has become a domineering paradigm that holds companies hostage to yesterday's management creeds and prevents them from seeing the new options needed to fulfill the mission of today. In adopting an intra-organizational evolutionary perspective which is the new trend of management, there is a need to examine the roles of key change agents inside and outside the organization in driving and shaping four processes—motivation, invention, implementation, and theorization and labeling-that collectively define a model of how management innovation comes about.

In a broader sense, management innovation has, received considerable research attention by Hamel in recent years. As discussed in the book, there are four key perspectives on management innovation: An institutional perspective that focuses on the socioeconomic conditions in which new management ideas and practices take shape. A

fashion perspective focuses on the dynamic interplay between users and providers of management ideas. The fashion perspective focuses on how management innovations emerge through the dynamic interplay between the managers who use new management ideas and the "fashion setters" who put forward those ideas. The cultural perspective focuses on how an organization reacts to the introduction of a new management practice. The cultural perspective attempt to understand how management innovation shapes, and gets shaped by, the culture of the organization in which it is being implemented. The rational perspective focuses on how management innovations and the individuals who drive them deliver improvements in organizational effectiveness. The rational perspective builds on the premise that management innovations are introduced by individuals with the goal of making their organizations work more effectively.

Imagining Own-Management Innovation

Essentially, the focus of this part is to clarify the question - what are the elements needed to enable organizations to create their own version of management innovation? Here, Hamel describes three dynamics (management challenges) of a true management innovation agenda:

i. the need to accelerate the pace of strategic renewal,
ii. the importance of making innovation the job of everyone in the organization, and
iii. the challenge of creating an organization that is worthy of everyone's best efforts.

To support his arguments on the need for and the benefits of management innovation, Hamel offers a range of evidence, including three major case studies:

a. Whole Foods Market, the upscale organic and natural foods supermarket chain, whose management model includes equity (no executive can earn more than 19 times the average employee's compensation), commitment to shared values and radical decentralization of decision making to in-store teams. Whole Foods Market was established in Austin around 1980. They have the finest natural and organic foods available, maintain the strictest quality standards in the industry, and have an unshakeable commitment to sustainable agricultural value chain. Hamel argued that the management method employed by this company has made them recorded huge success within a short period of time. This was possible through various innovation introduced and the management style employed.
b. W. L. Gore, the creator of Gore-Tex and many other high-tech fabrics, innovates through an organization that Hamel describes as 'a lattice, not a hierarchy. Gore was founded about 60 years ago by Bill and Vieve Gore and now with a capacity of over 18,000 employees and associates. Gore W. L is a material science company that focused on discovery and producing innovative for industrial use. Leaders are peer selected, and individuals are free to experiment, collaborate and self-select into projects, creating a vibrant marketplace for ideas. Accordingly, Whole Foods has organized itself into roughly eight teams at individual stores, all of whom have the mission of improving the food that Americans eat. The teams have the right to hire and fire their own members, and are given wide latitude about what to stock on the shelves and how to manage their stores. But their performance numbers are transparent to all, and their compensation is strongly linked to team not individual performance. Unlike so many other companies, front-line employees at Whole Foods have both the *freedom* to do the right thing for customers and the *incentive* to do the right thing for profits.
c. Google, which dominates internet searches worldwide and is increasingly becoming the world's leading provider of information of all types, has a management model that Hamel describes as brink of chaos. Google's small product development teams each have considerable freedom to create and pursue new initiatives, with each developer free to devote 20% of their time to experiment with whatever new ideas inspire them. Hamel sees the key attribute of Google's management model as 'resolvability'. In its continual stream of innovations, any one may be another Gmail or AdSense that promises to play a key role in Google's next stage of development.

Considering the remarkable achievements of these companies, Hamel asserts that management innovation yields an enduring advantage when one or more of three conditions are met: the innovation

is based on a novel management principle which challenges some long-standing orthodoxy; the innovation is systemic, encompassing a range of processes and methods; and/or the innovation is part of an ongoing program of rapid fire invention where progress compounds over time.

These examples offer fascinating insights into potential different approaches to organization and management, but they are too individualistic at providing systematic guidance to identifying a new management paradigm. For this purpose, Hamel offers organizational analogies that offer clear alternatives to hierarchical, top down unitary control, identifying three alternative organizational systems to guide management thinking.

3. Systematic Approach of Re-inventing Management Innovation

As viewed in this part, the concept of innovation stresses the growing need for organizations to proactively address challenges of the future by undertaking radical innovation that will transform their environments and the marketplace. The early research on innovation tends to address it as organization's ability to respond and adapt to external and/or internal changes. Subsequent work on innovation stressed more pro-active innovation and distinguished between types of innovation. Different from what is obtainable today, in the early concept of innovation emphasis was on the organization's ability to promote both process and product innovation, regardless of an immediate need for change.

According to Hamel, the call for paradigm-changing management innovation is not a direct step-by-step process; nevertheless, he sets out to describe the possible ingredients of a systematic approach to reinventing management thinking. Basically, answers how leaders challenge long-held and mostly unexamined beliefs about management that blind leaders to new possibilities and hold them hostage to the status quo. Hamel demonstrates that operational innovation which is often seeing in 'best practices' may allow an organization to temporarily move ahead of the pack. But best practices are readily diffused by consultants and soon copied by competitors, erasing the original advantage of the innovator. In the 'hierarchy of innovation', operational innovation forms the base, offering efficiency advantages, but diffuse rapidly. Product or service innovations are next, but unless patent protected, these are inherently imitable. Under the product innovation, two products were compared – the Cyclonic Vacuum Cleaner competing strongly with long and well-established Dyson Original.

In other words, product innovation may create a temporary lead for a company until upstarts leapfrog yesterday's pioneers. Then there is strategic innovation: introduction of new business models and systemic re-innovating old models of business. Examples of Ryanair's low-cost airline network, Apple's i-Tunes music store, Zara's fast-cycle model for supplying fashion clothing were given as these new models could generate huge returns, but are ultimately subject to decoding and imitation. The comparative of these products gives credence to Hamel innovation levels and why organizations must recognize and work around them for long term competitive advantage.

Strategy innovation based on strategy in business models may be more difficult to decode and thus provide a longer-lasting advantage, but it is management innovation that creates the greatest potential for strategic advantages in the long run. By challenging concepts that have long become accepted wisdom and have risen to the level of unquestioned assumptions about organizational reality, companies are able to innovate at a level that is most difficult to duplicate by competitors. In other words, innovation in management is the ultimate strategic advantage. Management innovation forms the apex of the innovation hierarchy representing the 'highest level of value creation and value defense.

It further asserts that even if one discount the emergence of a new management paradigm, it is inevitable that environmental changes and advancing technology will continue to drive the evolution of management practices and organizational forms. What kind of change can managers look forward to and to what extent will this change be stimulated by new management concepts and theories. This explores W.L. Gore's complete lack of an organizational chart and Google's 20-percent projects, as well as a handful of other companies that have bucked traditional management.

Rather, Hamel stresses that management is the solution that turns technological advances, business models and capital into prosperity. More so, management systems of tomorrow will be more like the Internet — democratized, transparent, and reliant

on personal integrity, financial self-interest and peer pressure to keep everyone in line. It is not a crazy idea; in fact, enlarging the "gene pool of ideas" and letting only the most adaptable survive is nature's way. Management innovation yields an enduring advantage when one or more of three conditions are met: the innovation is based on a novel management principle which challenges some long-standing orthodoxy; the innovation is systemic, - encompassing a range of processes and methods; and/or the innovation is part of an ongoing program of rapid fire invention where progress compounds over time." This chapter concludes by analyzing the compelling stories of three companies that seem to creatively incorporate these management principles so well that it has been difficult for competitors to copy them: Whole Foods, Gore, and Google. The case studies are well told and the lessons intriguingly applicable to a wide range of organizations

4. Conclusion

Management innovation yields an enduring advantage when the three conditions are met: the innovation is based on a novel management principle which challenges some long-standing orthodoxy; the innovation is systemic, encompassing a range of processes and methods; and or the innovation is part of an ongoing program of rapid invention where progress compounds over time. Hamel concludes that as the world is changing ever quickly, barriers are being removed, competition is greater, customer knowledge and choice expanding exponentially, and organisations can no longer maintain habitual approaches if they are to survive, there is a need for management innovation in order to cope with the ever changing market. Upon this premise, new management principles, competition, allocation flexibility, devolution and activism – stand in marked contrast to those inherited from the early decades of the industrial revolution, that doesn't make the old principles wrong, but they are inadequate if the goal is continuous, preemptive strategic renewal. The stance of this paper is based on the beauty of SMEs adopting management innovation for continuous survival and growth. It is important to state further that one person's imagination and foresight cannot be substituted for that of a multitude. In other words, rather than trying to sell his (Gary Hamel) point of view about the future, the writer intends to help the readers build their own. The goal here especially for SMEs operators is to provide thinking tools that will allow them to build their own agenda for management innovation, and then execute it accordingly.

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Impact of Corporate Tax on Investment Climate of Medium Scale Enterprises: Evidence from Kwara State - Nigeria

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Abstract

Over the years, private sector development is acknowledged globally as an appropriate strategy towards employment generation and general economic growth. However, Poor investment climate has been a significant obstacle to the development and sustainability of this sector and this has served as a cog in the wheel of progress of the overall economic development in many developing nations. This study investigates the relationship between corporate tax and medium scale enterprises' investment in Kwara state. A survey of 120 self- administered questionnaires was undertaking across three manufacturing industries. A total of 80 correctly filled and returned questionnaires were collected and analyzed using simple percentage, one-sample t-test, and correlation and regression analyses. All analyses were carried out within the Statistical Package for Social Sciences. From the results of the tested statistics, the four hypotheses were rejected. The results of the hypotheses reveal a coefficient of multiple determinations is 0.830 which implies that about 83.0% of the variation in investment climate is explained by variables in the model. Therefore, each of the variables in the investment climate (stable electricity, road network and access to finance) contributes significantly to investment decision. More so, correlation between Tax Compliance and Tax education equals 0.860 and same holds for Tax Compliance and Tax Campaign = 0.790, and Tax Education and Tax Campaign = 0.596. These correlation coefficients are highly significant as they are close to 1. The study concludes among others that corporate tax to a large extent has effect on capital accumulation, and it influence investment decision in the study area. It is therefore recommended that the government through various agencies should implement tax laws and policies that stimulate the aggregate level of investment in Kwara state.

Keywords: Corporate tax, Business investment, Tax Policy, Economic growth, Private sector
JEL Codes: **E62**

1. Introduction

Investment is an integral component of aggregate demand and a major source of economic growth in both developed and developing economies. A change in investment would not only affect aggregate demand but enhance the productive capacity of an economy. Hence, investment plays a vital role in expanding the productive capacity of the economy and promoting long term economic growth (Abiola and Asiweh, 2012). Literatures affirm that in market economy, investment stimulates wealth creation and economic growth. On this premise, private sector (business) investment no doubt remains the engine of growth while the public sector provides the enabling environment. Most significantly, private sector investment contributes to future output, economic growth, current demand and employment generation (Eisner, 1998). However, investment decisions in any economy or sector to a large extent depend on some key factors prominent among which is investment climate – comprises of tax policies, physical infrastructure, access to finance among others. Accordingly, there is much sentiment for encouraging investment, or at least for removing discouraging influences, to permit its economic contributions to be optimal.

The economic notion that there is a relationship between tax laws and investments behavior is founded upon some theoretical foundations put forward by scholars. The political, economic and social development of any country depends on the amount of revenue generated for the provision of infrastructure in that given country. One means of generating the amount of revenue for providing the needed infrastructure is through a well structure tax system. Azubike (2009) is of the view that tax is a major player in every society of the world. The tax system creates a major opportunity for government

to collect additional revenue needed in discharging its pressing obligations. The tax system especially the corporate tax offers itself as one of the most effective means of mobilizing a nation's internal resources and it lends itself to creating an environment conducive to the promotion of economic growth. Blumenthal, Christian, & Slemrod (1998) argue that taxes constitute key sources of revenue to the federation account shared by the federal, state and local governments.

In recent times, investigation into corporate income tax and its impact on private sector growth has become more important. Looking at the corporate tax rates charge around different business communities of the world, an upward trend is clearly visible in all developed and in few developing countries including Nigeria (Raza, Ali and Abazi, 2011). The effect of corporate taxes on business investment and exploiting entrepreneurial opportunities is one of the central questions in public entrepreneurial studies. This effect matters not only for the evaluation and design of tax policy, but also for thinking about economic growth (William, Baumol, Robert, Litan, Carl & Schramm, 2007). Hence, of late, many academics, economists, socio-economic researchers and policy makers have become interested in studying the potential effects of change in corporate tax on investment decisions in emerging economies.

The recent economic recession in Nigeria which is partly caused by serious decline in price of oil in the global market has led to a decrease in the funds available for distribution to the Federal, State and Local Governments. Accordingly, Afuberoh and Okoye (2015) suggestion that there is need for state and local governments to generate adequate revenue from internal sources has therefore become a matter of extreme urgency and importance. This need underscores the eagerness on the part of Federal, State and Local governments to look for new sources of revenue or to become aggressive and innovative in the mode of collecting revenue from existing sources. Part of the major target through which substantial revenue could be mobilized is corporate taxation. Consequently, over the years, corporate tax rate has been increasing while physical development in terms of infrastructures (electricity, water, road network among others) that could propel further investments have become dwindling. This disparity has been a major concern to many potential investors and business owners in Nigeria and especially Kwara state. The purpose of this study, therefore, is to contribute to the frontier of knowledge by investigating the relationship between corporate tax and business investment using Kwara state, Nigeria as the study area. Specifically the study will investigate the extent to which corporate tax rate influences investment decisions among medium scale enterprises, and also assess the impact of tax awareness programmmes on corporate tax compliance by medium scale enterprises

2. Literature Review

Conceptual Clarification

Taxation/Tax/Corporate Tax

The government of any nation has legislative powers to impose on its citizens and businesses any form of tax and at the rate it deemed appropriate (Richardson, 2006). Previous studies agreed that taxation is an obligation on individual and companies to contribute to general social welfarism. In this view, Farayola (1987) described taxation as one of the sources of income for government, such income as used to finance or run public utilities and perform other social responsibilities. Whereas, Ojo (2008) stresses that, taxation is a concept and the science of imposing tax on citizens. Hence, taxation is generally an obligation on individuals and businesses to contribute to developmental programmes of the government. Tax according to Cassou (1997) is a compulsory levy imposed on a subject or upon his property by the government to provide security, social amenities and create conditions for the economic well-being of the society. Anyanwu (1997) defined Tax as a compulsory payment or levy imposed on income, profit, property, wealth, estate, goods and services of individuals and corporate bodies by the government for the sustenance of its expenditure on numerous activities and for which there is no guarantee direct benefit from the government to the tax payers. According to Ndekwa (2015), people pay tax according to their income and businesses pay tax according to profit made. From the above, it could be deduced that tax is itself a compulsory levy which is required to be paid by every citizen. It is generally considered as a civic duty to citizenry. The imposition of taxation is expected to yield income which should be utilized in the provision of amenities, both social and security and creates conditions for the economic wellbeing of the society.

Corporate Tax, also called Company Tax (CT) or Company Income Tax (CIT) is a direct tax imposed by the government on the income or capital of corporations or analogous legal entities. This connotes that corporate tax is a levy imposed on taxable profit of firms with a stipulated statutory rate. According to Edame and Okoli (2013) the burden of corporate taxation obviously influences the volume and location of business investment for the simple reason that it determines after tax returns from such investment. Corporate income taxes vary from one country to another. In many advanced nations, between 30 and 40 percent are charged for corporate income tax e.g. USA 35% and many other EU Countries. Many countries impose these taxes at the national level, and a similar tax may be imposed at state or local levels. A country's corporate tax may apply to corporations incorporated in the country, corporations doing business in the country on income from that country, foreign corporations who have a permanent establishment in the country, or corporations deemed to be resident tax purposes in the country. In Nigeria, company income tax is a tax payable for each year of assessment on the profit of any company accruing in, derived from or brought into or received from a trade, business or investment in Nigeria at the rate of 30% (Ekpung & Wilfred, 2014).

It is important to acknowledge that corporate taxes may have different magnitude of influences on investment in different sectors of an economic. As pointed out by Davis and Henrekson (2004), corporate income taxes might differentially affect investment in various sectors, as well as influence the allocation of resources between the formal and the informal sector. In the same vein, prior research in public finance has developed elaborate constructs of corporate tax rates that are relevant to particular investment decisions. In some instances, statutory rates may measure the correct marginal tax rates. Hall and Jorgenson (1997) put up an extensive literature on how to compute the economically correct marginal tax rates using assessments of profitability of future projects. But average rates might also be relevant for investment decisions if firms are credit constrained or if they make discrete investment choices (Devereux and Griffith 2003). Akintoye and Tasie (2013) states that taxes aside serving as source of revenue for government, are also imposed to regulate the production of certain goods and services, protection of infant industries, control business and commerce, curb inflation, reduce income inequalities and these in turn result to economic growth. Hence, a sound tax system that protects infant industries encourages entrepreneurial development in the country, which is paramount for the sustenance of economic growth of every economy.

It is therefore evident that a good tax structure plays major roles in the process of economic growth of any nation. Supporting the above, Musgrave and Musgrave (2006) maintained that taxation affects the level of public savings thus the volume of resources available for capital formation; both the level and the structure of taxation affect the level private saving. Akintoye and Tasie (2013) explained that tax incentives system may be designed to influence the efficiency of resource utilization; the distribution of the tax burdens plays a large part in promoting an equitable distribution of the fruit of economic development; the tax treatment of investment from abroad may affect the volume of capital inflow and rate of reinvestment of earnings there from; and the pattern of taxation on imports relative to that of domestic producers affect the foreign trade balance.

Business Investment/Investment Climate

In broad terms, a business is a commercial or industrial activity of an independent nature undertaken for profit making purpose (Burns and krever, 1998). On the other hand, the term investment was defined by Coen and Eisher (1992) as capital formation, the acquisition or creation of resources to be used in production. Therefore, business investment is the introduction and inducement of capital into a particular entity or enterprise for the realization of profit, revenue and income. Business investment may be investments in stock, plants and machinery, properties, goods and services as the case may be. These investments when efficiently managed is expected to yield at a speculated time, these yield in form of interests on investments or profits which may be re-invested or used for the continual existence of the business. The concept of business may overlap with the notion of employment for tax purposes. In the capitalist economies much attention is focused on business investment in physical capital building, equipment and inventories. However, it is important to note that investment is also undertaken by government, non-profit institutions and households, and it includes the acquisition of human and intangible capital as well

as physical capital. According to Maqbool, Maaida and Sofia (2010), in the process of investigating the economic performance of any country, one of the key determinants of economic growth is investment. Moreover, most of the countries that grow rapidly invest a considerable fraction of their Gross Domestic Product (GDP) into providing enabling environment for business growth.

According to the United Nation (UN, 2005), investment climate can be explained as access to basic physical infrastructure such as electricity, telephone, water and roads; access to information and advisory services; higher labor productivity; efficient tax administration and tax rates; access to finance; availability and affordability of urban land; business regulations and trade facilitation services, among other elements. On the other hand, business environment connotes all factors that have a bearing on the business such as its strengths, weaknesses, internal power relationships and orientations of the organization; government policies and regulations; nature of the economy and economic conditions: socio-cultural factors: demographic trends; natural factors; and, global trends and cross-border developments. A favourable investment climate provides opportunities and incentives for investors to invest profitably, create jobs, and expand national output thereby increasing private investment and economic growth (World Bank, 2004). Bernal *et al*. (2004) note that improvements in the investment climate in developing countries are key to increasing the flow of investments and, consequently, a higher level of economic growth and development. On this basis, in the world poorest countries, businesses frequently operate under a climate that undermines their incentive to invest and grow. In line with this environment, investors complain about poor infrastructure, particularly power shortages; poor transport; poor telecom connectivity of business locations and inefficient tax administration (Mima and David, 2012; World Bank, 2004).

Small and Medium Enterprises

The term 'Small and Medium Enterprises' (SMEs) has been given different meanings by various scholars and experts in the field of business and management. There is however no universal acceptable definition of the term. It is also important to recognize that definitions changes over a period of time, and depend to a large extent on a country's level of development. For instance, what was large scale in the 1970s may be regarded as small-scale today In the Nigeria economy. Also, what is regarded as small-scale business in one country may be relatively large in another industry or country (Owualah, 1999). The most useful generic definition of small-scale business is perhaps one which might emphasize those characteristics, small-scale firms possessed that make different from those of large firms.

According to Masanai and Fatoki (2012) and Adebayo (2015), there are three prominent characteristics of SMEs in Africa. These are: relatively small share of its market; its owners in personalized manner manages the business enterprise not necessarily through a formalized management structure in large corporations, and finally it is independent as it does not form part of large corporation which can provide a financial umbrella. The above characteristics justifies that SMEs' owners/managers are free in taking their principal decisions and implement such, even though that freedom may be circumscribed by their obligation to outside financial institution. However, the definition of SMEs changes overtime depending on the circumstances because the clarification of businesses into large-scale is a subjective and qualitative judgment (Wolfgang, Kenneth K., Yan Liu, and Dermot, 2014). While a small scale industry is an industry with a total capital employed over 1.5 million naira, but not more than 50 million naira, including working capital but excluding cost of land and /or a labour size of 11 to 100 workers; a medium scale industry is such with a total capital employed of not more than 50 million naira, but not more than 200 million naira, including working capital but excluding cost of land and/or a labour size of 101 – 300 workers

Empirical Review

It is evident in research that high corporate tax is anti-economic growth as it discourages new incentives thereby distorting investment decisions. Ukegbu (2012) studied multiple-tax effect on Gross Domestic Product in Nigeria. The study pointed out the resultant effects of poor investment growth and its low contribution to GDP on Nigeria manufacturing sector due to persistent increase in multiple-taxation. The study found that multiple-taxation has affected the Gross Domestic Product of the country, which has decline from 9.5% in 1975 to 6.65% in 1995, 3.421% in 2010. Similarly, it was further revealed that manufacturing capacity utilization declined rapidly from 70.1% in 1980 to

29.29% in 1995, 52.78% was recorded in 2005 but the figure declined to 46.44% in 2010.

The studies of Gwartney and Lawson (2006) disclose that high marginal tax rate as witnessed in Nigeria has an enormous effect on GDP. As marginal tax rate rises, individuals get to keep less and less of their additional earnings. It discourages work effort, as taxes reduce the amount of additional earnings that one is permitted to keep. It also distort price signals and encourage individuals to substitute less desired but tax deductible goods for non-deductible ones that are more desired. High tax rate will reduce the incentives of people to invest in both physical and human capital. When tax rates are high foreign investors will look for other places to put their money and domestic investment will look for investment projects abroad were taxes are low. This therefore contributes to a reduction in GDP.

Christopher, et al (1983), found in a study of 208 British industrial companies, that the low investment experienced then was as a result of inadequate demand for funds (rather than general storage of capital) reflecting low investment opportunities. They subsequently suggested that a policy aimed at expanding the domestic demand would stimulate investment. Kiaselgoff and Modigliani (1987) discovered in a bid to quantity demand, many proxies have been suggested, including sales, output, profit and others. But in a study involving sixty US from Kul (1971) demonstrated that sales is superior to profit in explaining investment behavior.

Hall and Jorgenson (1971) estimated a one percent increase in cost of capital as a result of a cut in corporate tax rate from 52 to 48 persons in 1964. Krausz (1987) using Npi stimulation revealed that for certain assets classification lowering the tax rates from 46 to 33% may actually reduce the Npi of projects for companies whose tax rate is below 35%. As to its influences on foreign investment, the corporate income tax has been founded by Moore, Swenson and Steece (1982) as having a weak relationship with foreign manufacturers' investments.

Tony, et al (1980) in their survey of foreign firms in US indicated that executives of such companies ranked states and local tax rate 15th and 16th respectively. A survey carried out by Fortunate (1977) on US executives indicated that 20% of the respondents cited stated and or local taxes on business and industry as one of the three to five most important factors in choosing a location. In Nigeria, Mary (1965) found that only six out of twenty-six British companies operating in Nigeria attached much importance to the generous tax incentive offered in Nigeria.

Hakem (1966), in his survey, observed that only 16% respondents selected tax incentive as a factor that influenced their decisions to set up a pioneer industry. In another empirical study carried out by Philip (1969). It was understood that out of 51 companies studies 33 ranked import duty reliefs highest amongst tax incentives available to them. It ranked its second most important. Also, Philips (1969) study 60% of the firms studies thought they probably world set in without tax holiday. 7% were more definite about the unimportance of tax incentives while 35% through otherwise. Other incentives include accelerated depreciation. Hall and Jorgenson depreciation has a 9% reduction in the cost of capital and 17.5% increase in net investment in manufacturing equipment over the period 1854-70.

Theoretical Review

Several theories have been used in literatures to support government influence in private enterprise. Keynesian theory offers useful insights to the understanding of the effect of government intervention and incentives in private enterprises (Ogechukwu, 2011). The Keynesian theory argues that private sector decisions sometimes leads to inefficient macroeconomic outcomes and therefore advocate active policy response by the public sector.

This study adopts the Harberger Capital Tax Theory. Harberger Capital Tax Theory characterized corporate tax as an additional tax levied on capital income originating in the corporate sector, layered on top of the individual income tax collected on capital income from both sectors. He then estimated incidence through the changes in factor prices and product prices that would result from a small increase in the corporate tax. Harberger's main conclusion is probably the most familiar aspect of the paper. In particular, under reasonable assumptions regarding the two sectors' production elasticity of substitution and consumers' elasticity of substitution between the two sectors' products, Harberger showed that the corporate income tax was borne fully by owners of capital, economy-wide. This finding has two important elements. First capital bears the entire tax; it is not shifted to labor

or consumers, the other potential victims in the model. Second, it is all capital, not just corporate capital that bears the tax. Intuitively, the lower after-tax return that would be available in the corporate sector because of the higher tax burden drives capital into the non-corporate sector, pushing down the available non-corporate return and allowing the corporate return to recover.

In equilibrium, the after-tax returns in the two sectors must be equal, and Harberger estimates that this new equilibrium level of after-tax returns will be lower by just the amount consistent with capital bearing the entire corporate tax. Harberger's conclusion, which probably remains the most commonly held view on corporate tax incidence, indicated that the corporate tax was less progressive than under the shareholder-incidence assumption because shareholders as a group (at least in 1962, when pension funds accounted for a much smaller ownership share) were more affluent than owners of capital as a whole, a large share of which is owner-occupied housing. But aggregate capital ownership is more concentrated among higher-income individuals than consumption or labor income, and so the corporate income tax could still be seen as contributing to tax progressivity. Another message of Harberger's work, though, was that the corporate income tax distorted the allocation of capital between corporate and non-corporate uses in a way that an overall capital income tax did not. If the incidence of the two taxes were the same, then the only "contribution" of the corporate tax was gratuitous deadweight loss. Indeed, the subsequent optimal taxation literature supported the notion that taxes that distort production decisions are to be eschewed when sufficient other tax instruments are available (Diamond and Mirrlees 1971). Thus, Harberger's analysis has also lent support to the view that corporate tax is not a necessity or desirable component of an efficient, progressive tax system.

3. Methodology

This research adopts a positivism approach with the use of a survey design. The positivism philosophy generates hypotheses (or research questions) that can be tested and allows explanations that are measured against accepted knowledge. Hence, the emphasis is on quantifiable results that lend themselves to statistical analysis. For the purpose of this study, the population of interest consists of medium scale enterprises operating in Kwara State, domiciled in capital city – Ilorin, and who have records of tax payment with the Kwara State Internal Revenue Service till February 2017.

A non-probability sampling design was adopted and a purposive sampling procedure used. In other words, under non-probability sampling the researcher purposively choose the particular units of the universe for constituting a sample on the basis that the small mass that they so select out of a huge one will be typical or representative of the whole (Kothari, 2004). The choice of this sampling design was informed by the homogenous characteristics of large scale enterprises in the selected area.

Primary data was gathered specifically for this work with the use of self-administered questionnaire to obtain opinions directly from respondents, i.e. selected sample. The choice of this method was to increase the commitment of the stakeholders. To obtain the required data/information, a detailed questionnaire was prepared and administered to various companies that constitute the study respondents. A total of one hundred and twenty questionnaires were distributed among the three selected companies – Bioraj Industry Ltd, Tuyil Pharmaceutical Ltd and LUBCON Group. The design of the questionnaire was based on a 5-point Likert attitude scale. Each level of the scale is represented as 5-Strongly Agree, 4-Agree, 3-Undecided, 2-Disagree and 1-Strongly Disagree.

This study adopted both descriptive and inferential statistics for the analysis of data gathered through the questionnaire. The descriptive analysis makes use of such tools as; tables, frequency distributions and percentages. The use of Pearson’s Correlation and Multiple Regression were adopted for the inferential statistical analyses. In order to measure the type of relationship that exists between the dependent variable and each of the independent variables, the Pearson’s correlation coefficient was used, while regression analysis was adopted to measure the impact among two or more variables.

Research Hypotheses

From the above two hypotheses was raised as follows

Ho_1: Corporate tax rate does not significantly influence investment climate of medium scale enterprises,

Ho_2: Tax awareness programmes have no significant impact on corporate tax

compliance among medium scale enterprises,

Test of Hypotheses

Hypotheses I (Ho_1) was tested using Pearson Correlation Analysis, while hypotheses II (Ho_2) was tested using regression analysis. All tests were carried out using the procedures within the Statistical Package for Social Sciences (SPSS) 16 at a 5% significant level, i.e. α = 0.05.

Test of Hypothesis I

Ho: Corporate tax rate does not have any significant relationship on investment climate.

Table 4.1: Test of Hypothesis I (Correlation Analysis)

Model	R	Tax Rate	Physical Infrastructure	Policy Support
Tax rate	Pearson Correlation	1	.760	.841
	Sig. (2-tailed)		.000	.000
	N	80	80	80
Physical Infrastructure	Pearson Correlation	.860	1	.596
	Sig. (2-tailed)	.000		.014
	N	80	80	80
Policy Support	Pearson Correlation	.790	.596	1
	Sig. (2-tailed)	.000	.014	
	N	80	80	80

b. Dependent Variable:; Investment Decision

In the table above, the correlation between tax rate and physical infrastructure equals 0.760 and this is significant. The same holds for tax rate and policy support = 0.841, and policy support and physical infrastructure = 0.596. These correlation coefficients are significant as they are close to 1. These show that the relationship between the variables is strong and positively correlated.

Hypothesis II

Ho: tax awareness programmes have no significant impact on corporate tax compliance

The Independent variable is Tax Awareness Programmes represented by (TA) while dependent variable is Tax Compliance (TC). TA was proxy to:
Tax Education (TE)
Media Tax Campaign (MC)
Tax Officers Behaviour (OB)

Test of Hypothesis II (Regression Analysis)

Table 4.2:Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.711[a]	.830	.807	.31678	2.761

a. Predictors: (Constant), TE,MC,OB; b. Dependent Variable: MT

Table 4.3.1 reveals that the coefficient of multiple determination is 0.711; the implication of this is that about 71.10% of the variation in Tax Compliance measures is explained by variables in the model; i.e. Tax Education (TE), Media Tax Campaign (MC), Tax Officers Behaviour (OB), while the remaining 28.9% is explained by other factors which are not included in the model. The regression equation (model formulated) proved to be very useful for making predictions since the value of R^2 is close to 1.

Table 4.3.2: ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	312.204	3	85.441	837.406	.0000[a]
	Residual	48.694	76	.088		
	Total	360.898	79			

a. Predictors: (Constant), TE,MC,OB: b. Dependent Variable: TA

The calculated ANOVA table is analyzed to see if *any* of the variables are significant. The F-statistic is compared with 3 and 76 degrees of freedom using stats tables. From the ANOVA table, $F = 837.406$, p-value = 0000 < 0.05 (sig.). Since p-value < 0.05 (critical value), the null hypothesis is rejected and the alternative accepted. This implies that at least one of the predictors is functional for measuring Tax Compliance, therefore the model is useful.

Table 4.3.3: Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	4.322	.492		9.797	.000
	Tax education	.271	.098	.096	2.395	.004
	Media campaign	.202	.093	.422	4.191	.000
	Officers behaviour	.196	.091	.407	6.915	.002

a. Dependent Variable: Tax Rate

Table 4.3.3 above provides information on the effect of individual variables (the "Estimated Coefficients" or "beta") on the dependent variable. The coefficient of Tax Education is 2.395 with p-value of 0.004 less than 0.05% (critical value), the coefficient of Media Campaign is 4.191 with p-value of 0.000 less than the 0.05% (critical value), and the coefficient of Officers Behaviour is 6.915 with p-value of 0.002 less than the 0.05% (critical value). This implies that each of the variables has contributed to the model. Since the p-value of all the dependent variables are less than 0.05 as demonstrated above, we reject H0 and conclude that tax awareness has a significant impact on tax compliance at 0.05 significant levels.

Therefore, we can use the values in the **"B"** column under the **"Unstandardized Coefficients**" column, to present the regression equation as:

Tax Compliance (TA) = 4.322 +0.271(TE) + 0.202(MC) + 0.196(OB)

Discussion of Findings

The purpose of this study was to investigate the effect of corporate tax on business investment climate. From the analyses of hypotheses one, it was established that certain factors influence investment decision in the study area. These factors are physical infrastructure such as stable electricity, good medical facilities, road network, policy support among others determine investment decision. This connotes that decisions to invest in a state could be facilitated by investing in the physical infrastructure and policy support by the government. This finding supports former investigations by Onakoya, Fasanya and Abdulraheem (2013) that poor physical infrastructure such as electricity, good road, access to finance, portable water, good health care among others do not often create a good climate for investment in Nigeria.

From the analyses of hypotheses two, it was established that tax awareness programmes have significantly effect on tax compliance in the study area. This means that creating constant awareness about tax compliance in the media and tax education to the public has significant positive impact on tax compliance among the corporate bodies. This study supported former related studies by (Adebayo, 2015) who found that adequate tax awareness, perceived benefit of tax payment and legal consequence for tax evasion increase tax compliance among corporate organizations in Kwara state. As

reviewed in literature and supported with empirical investigations, poor physical infrastructure such as epileptic power supply, inadequate basic infrastructural facilities, weak policy framework were the major factors confronting the growth of business investment in Kwara state.

5. Conclusions and Recommendations

Conclusions

i. It was established that corporate tax rate influences investment climate in the state. This connotes that to a significant extent, the decision on whether to invest or not depends among others on the corporate tax operational in the environment.
ii. The study further concludes that there is a positive relationship between tax awareness and tax compliance among corporate firms in the study area i.e. the higher the level of awareness of corporate bodies about tax, the more likelihood of compliance.
iii. More so, it was concluded that moderate tax rate, simplicity of tax return, high perceived benefits of tax payment to a largely extent influence tax compliance among the study population.

Recommendations

i. Of high priority is the need to massively invest in the physical infrastructural development in the study area. In this regards government could through public private partnership (PPP) invest in the improvement of electricity supply, portable water distribution, medical facilities, good road network, among others as these would boost business investment in the state.
ii. The government through tax consultants should regularly review tax policies such that emphasize on low tax rate, creating a good taxpayers' perception and simple filing of tax return as this will encourage optimal compliance among corporate organizations. Since taxation is an inevitable source of government revenue, the problem of double taxation should be avoided, tax incentives in the form of tax cut should be provided.
iii. Government through the State Internal Revenue Service should improve tax awareness programmes on the media outlets e.g. radio, television, talk-show and other medium as this will create more enlightenment to taxpayers. Inferred from the result of the findings, it was shown that there is a positive relationship between tax awareness and tax compliance.

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