



Central Bank of Nigeria (CBN) Non-Interest Intervention Funds: Opportunities and Challenges



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Abstract: *The Nigerian economy is majorly skewed towards the oil sector which accounts for about 90 percent of her revenue. The spillover effects of the global crisis of 2008 stimulated the need to divest the economy. To support this drive the CBN introduced various conventional Intervention funds. Although, these funds were interest based which technically is of little or no benefit to the 50 percent of the country's population that are Muslims. This further necessitate the launch of a Non-Interest form of Intervention funds. However, the purpose of this paper is to examine the opportunities available in the CBN Non Interest Intervention funds and as well as the major challenges. To document this study, content analysis research method on a secondary data was adopted. The study shows that the scheme will boast economic growth, increase financial inclusion, create job opportunities, reduction in poverty level, ensures food security, increase foreign exchange earnings and growth of small and medium scale enterprises. More so, the key challenges includes too much bureaucracy with participating financial institutions, low level of public awareness, inadequate Non-Interest bank branches, manpower and collateral issues to mention but a few. The study concludes that the schemes would have a significant impact on the overall development of Nigeria economy. Furthermore, the study recommends adequate public awareness, reduction in the bureaucratic procedures, increase in branch networks and recruitment and training of bank staff.*

Keywords: Central Bank of Nigeria, Intervention funds, Non-Interest Bank, Nigeria, Participating Financial Institutions

Introduction

The Central Bank or the Reserve Bank is considered as the umpire or regulator of all Deposit Money Banks (DMB's) in many economies of the world which Nigeria is not an exception. However, the Central Bank of Nigeria (CBN) has its core mandate as enshrined in the CBN act of 2007 which is to ensure monetary and price stability, issue legal tender currency, maintain external reserve, to safeguard the international value of the legal tender, promote sound financial system, act as a banker and economic or financial adviser to the Government. Although, to achieve this mandate there exist other auxiliary roles which the CBN can play depending on the circumstances of the economy or the policy thrust of the government. This

could be in form of a developmental roles or financing which could improve the lives of Nigerians and also to create an enabling environment for businesses to thrive which is a paradigm shift from the orthodox approach.

Subsequently, this developmental roles or financing has a long history dated as far back as 1960's where programs were launched and implemented. Examples of such programmes are commercial bill financing scheme (1962), Bank of Industry (1964), Rural Banking programme (1977), Agricultural Credit Guarantee Scheme (1978) to mention but a few. Though, some of these programmes are still relevant with some modification to reflect modern day reality while others have been expunged. But the modern day Nigeria is now surrounded with a lot of challenges which is both internal and externally inclined. Although, the global crisis of 2007/08 could be considered as one of those challenges due to its spillover effect on the Nigeria economy which the banking sector was not left out. This scenario has affected the mandate of the CBN and as such gave them a new sense of direction and strategy in order to introduce policies and programmes that could ensure the speedy recovery of the economy and also to make it resilience to external shocks. Among such development was to widening the landscape of the Nigerian financial system which led to the introduction of Non-interest banking and finance products and conventional intervention funds to mention but a few.

Among such funds are the N200 billion Commercial Agriculture Credit Scheme (CACS), N200 billion Small and Medium Enterprises Restructuring and Refinancing Facility (SMERRF), Small and Medium Enterprises Credit Guarantee Scheme (SMECGS), Power and Airline Intervention Fund (PAIF), N220 billion Micro Small and Medium Enterprises Development Fund (MSMEDF), Nigeria Electricity Market Stabilisation Fund (NEMSF), N300 billion Real Sector Support Fund (RSSF), Anchors Borrowers Programme (ABP), N50 billion Textile Intervention Facility, N500 billion Export Simulation Facility (ESF) and Youth Empowerment Development programme. More so, additional funds were created so as to cushion the effect of COVID-19 on house hold and businesses but all these facilities were structured to have a single-digit interest rate which is lower when compared to the DMB's interest rate on lending. Though, these DMBs are to serve as a special purpose vehicles (SPVs) in facilitating the disbursement of funds to beneficiaries.

Despite these funds created it has technically phase out the Non-Interest banks from participating and also over 100 million Muslims have been denied access to credit as it is only favourable to the conventional banks and non—Muslims. This scenario has created a lopsided business environment and couple with the yearnings of the Muslims, the CBN introduced the Non-Interest Intervention schemes so as to address this anomaly. It is based on this that this study is intended to examine the Non Interest Intervention scheme with reference to its opportunities and challenges. However, this paper is structured into five (5) sections. Section one covers the introduction. Section two comprises of the literature review, Section three encapsulates the methodology, and Section four captures the results and discussions while section five covers the conclusion and recommendations.

Literature Review

Conceptual Review

Intervention Fund: According to Maxwell (2001) is a scheme initiative to support the less developed economy of the world by granting them low interest loan to support them in engaging in business venture. More so, Wisdom, (2016) sees intervention funds as several

efforts made by the government (monetary authorities) in diverse ways in order to encourage the growth, survival and full participation of a businesses in an economy. In the context of the study, intervention funds refers to funds set aside by the federal government through its monetary authorities in order to finance critical sectors of the economy at a low cost in order to create jobs, diversify the economy and to promote inclusive growth.

Non Interest Intervention Funds: This refers to as schemes/programmes or funds set aside by the monetary authorities to finance households, businesses and other critical sectors of the economy in accordance with the dictates of Islamic jurisprudence or *Shariah* so as to achieve certain macro-economic objectives. However, the CBN released the guidelines for the Non-interest variant of the intervention funds in July, 2020. There are eleven (11) guidelines released namely:-

- i. Non Interest Guidelines for the Accelerated Development Schemes (ADS)
- ii. Non Interest Guidelines for Intervention in the Textile Sector.
- iii. Guidelines for the operations of Agric-business, Small & Medium Enterprises Investment Schemes (AGSMEIS) for Non Interest Financial Institutions (NIFI's)
- iv. Non Interest Guidelines for Micro, Small & Medium Enterprises
- v. Micro, Small & Medium Enterprises Development funds for Non Interest Financial Institutions
- vi. Non Interest Guidelines for Non-Export Simulation Facility
- vii. Non Interest Guidelines for Anchors Borrowers Programme.
- viii. Non Interest Guidelines for Real Sector Support Facility (RSSF)- Revised Guidelines
- ix. Non Interest Guidelines for the Operations of the Credit Support for the Health Care Sector.
- x. Modalities for the Implementation of Creative Industry Financing Initiatives.
- xi. Non Interest Guidelines for the Implementation of the N50 billion Target Credit Facility (Central Bank of Nigeria, 2020a)

Non Interest Guidelines for the Accelerated Development Schemes (ADS): This scheme is specifically for youths between the ages of 18-35years. It is targeted towards agricultural production especially in commodities which each state has comparative advantage. Average financing is N250,000 (Arable crops), N500,000 (Livestock) and N1.5 million (Plantation Crops).

Non Interest Guidelines for Intervention in the Textile Sector: This fund is aimed at revamping the textile industry and its entire value chain. This finance covers working capital (0-3yrs), acquisition of plant and machinery (Obligor limit of N2billion) and refinancing of existing projects (Obligor limit of N1billion). The fund has a global limit of N50 billion with a maximum tenor is 10years.

Guidelines for the operations of Agric-business, Small & Medium Enterprises Investment Schemes (AGSMEIS): This Scheme is a product of Bankers Committee which is targeted at agri-businesses and SME's. This funds emanated from the contribution of NIB out of their profit after tax which is taxed of about 5%. The financing is decomposed into three namely debt which is 50% of the funds has obligor limit of N10Million for 7 years while equity which is 45% of the funds has obligor limit of N2billion for 10 years and the remaining 5% is for developmental purpose especially capacity building and other related cost.

Micro, Small & Medium Enterprises Development Funds: It has a global limit of about N220 billion. It's a 50:50 ratio for on financing to MSME by participating financial institutions (PFI's). The funds is applied in two component-commercial which about 60% is for women and development. Its financing is as thus; Micro business (obligor limit of N500,000 for a year), SME (obligor limit of N5Million) and N50Million for Non Interest Microfinance Banks and NIFIs with a duration of 1-5 years.

Non Interest Guidelines for Non-Export Simulation Facility: Global limit for this fund is N50 billion and it is targeted to boast the Non-Oil export sector. It has an obligor limit of N5billion which must not exceed 70% of its cost. It has a maximum tenor of 10 years.

Non Interest Guidelines for Anchors Borrowers Programme: This scheme is targeted at small household farmers (SHF) where by farm inputs in cash and kind are availed to them to boast their production. Their production should be goods which their state has a comparative advantage. Under this arrangement SHF are group in 5-20 persons and has a tenor of not more than 60 months.

Non Interest Guidelines for Real Sector Support Facility (RSSF): The RSSF is aimed at financing the private critical sectors in the economy. It covers manufacturing, SME's, Agric value chain, services, new and expansion projects etc. However, for working capital financing it has a tenor of one year while core financing it has a maximum tenor of 10years. More so, under same scheme it can be financed via DMBs cash Reserved Ratio (CRR) whereby DMBs financing either new or existing projects in the real sector may request for the release of funds from their CRR. Under this arrangement, it has an obligor limit of N10 billion with a duration of 7years.

Non Interest Guidelines for the Operations of the Credit Support for the Health Care Sector: This scheme is aimed at boosting the health care sector in the country and its entire value chain. Funding is to emanate from RSSF. Working capital financing under this arrangement is a year with an obligor limit of N500 million whereas term financing is for 10 years with an obligor limit of N2 billion.

Modalities for the Implementation of Creative Industry Financing Initiatives: Global obligor limit for this funds is N22.9 billion. This funds is meant to provide low cost funds to entrepreneurs and investors in Nigeria creative and information technology (IT) subsector. It covers fashion, IT, movie and music.

Non Interest Guidelines for the Implementation of the N50 billion Target Credit Facility: This fund is meant to support household and business enterprises affected by COVID-19. It's been financed from the MSME development funds. It has a tenor of not more than 3years. Additionally, these intervention funds are disbursed or routed through the CBN approved products of the Non-interest financial Institution's participating in the scheme.

Non-Interest Financial Institutions(NIFI): According to CBN (2011) sees NIFI means a bank or Other Financial Institution (OFI) under the purview of the Central Bank of Nigeria (CBN), which transacts banking business, engages in trading, investment and commercial activities as well as the provision of financial products and services in accordance with any established non-interest banking principles. The NIFI that operates in accordance with the *shariah* has the following principles namely: - Prohibition of *riba* (interest), prohibition of *maysir* (Gambling), *gharar* (Speculation and uncertainty), prohibits investment in *haram*

(prohibited) investment/products, based on Profit and Loss framework and Sanctity of Contracts. However, the NIFI has the following financing products in which the intervention funds are structured namely *Murabahah* (Sales contract), *Musharakah* (Partnership), *Mudarabah* (Trust Partnership), *Ijarah* (Lease), *Istisna* (Contract of manufacture), *Bai Salam* (Deferred sale usually in agriculture) to mentioned but a few.

Theoretical Framework

This study adopted the Keynesian Model. This model was postulated by John M. Keynes in his paper titled: *The General theory of employment, Interest and Money* which he advocated for Government intervention in an economy due to the market failure. By government intervention, it will boost the aggregate demand which could revamp the economy from either recession or depression. That government should increase spending i.e., more investment rather than savings and reduces taxes as this could create jobs and boost the consumer purchasing power. Consequently, this view is a product of the intervention funds created by government so as to support the private sector which could invariably lead to the achievement of the macro-economic objectives.

Empirical Literature

Aliyu (2013) examined the impact of government interventions on small scale enterprises in Adamawa state with reference to Mubi North Local Government Area (LGA). Survey research design was adopted and primary data was obtained through the use interviews methods and questionnaire administered to the respondents. Simple percentages and Non-parametric technique specifically the Chi-square techniques were used in the analysis. The study concluded that the intervention fund of the Central Bank of Nigeria (CBN) has positively resulted to growth of small scale enterprise in the study area. In a related study by Vivian and Martin (2011) which they examined the role of government in promoting small scale businesses in Kabba/Bunu LGA Kogi State. Structured questionnaire were distributed among forty (40) small scale business owners who were selected randomly. Regression analysis and analysis of variance (ANOVA) method were used to analyze the data. The study concluded that there exist a positive correlation between government role and small scale business.

Onwukwe and Ifeanacho (2011) evaluated the impact of government intervention on SME growth in Imo State. Survey method and stratified random sampling was utilized. Primary data through the use of Questionnaires and interview was administered to a sample size of 450 respondents. The study concluded that there is a positive significant relationship between government intervention and growth of small and medium scale enterprises (SMEs) in Imo State. Similarly, Saheed, Alexander, Isa, and Adeneye (2018) assessed the Anchor Borrower Programme on agricultural commodity price and employment generation in Argungu LGA Kebbi State. Primary data were collected through the use of interview and structured questionnaire administered to 400 farmers. Inferential statistics such as multiple regression analysis was used to analyze the data obtained. The study concluded that Anchor Borrower Programmes have a positive and it's statistically significant towards having impact on agricultural commodity price and employment generation in the local government area.

More so, Friday, Ogbechie, Kelikume and Ikpesu (2016) assessed the impact of the credit supply, and various commercial bank loan schemes on agricultural sector production in Nigeria. Secondary data was used in which vector autoregressive (VAR) approach was utilized in the data analysis. The study concluded that commercial loans to agricultural sector has a positive relationship to agricultural production whereas Agricultural Credit Guaranty

Scheme Fund have negative impact agricultural sector production. Adamgbe, Belonwu, Oche and Okafor (2020) examined the impact of Central Bank of Nigeria agricultural funds on the economy. The study adopted a dynamic, two-sector general equilibrium model. The study shows that the CBN intervention has contribute positively to GDP, lead to a decline in subsidy, boast revenue, increase export and reduce import of agricultural products and also the incomes of farm owners.

Dori (2016) examines the effects of CBN's development finance on the economic growth and development of the Nigerian economy with the Credit Schemes as a case study. The study concluded that the CBN schemes has resulted to an increase in the volume of credit which invariably lead to increase in the level of productivity, job creation, agricultural output, domestic trade, rural development, exports, foreign earnings and import substitution and consequently, improved the country's level of economic growth and development. Additionally, Abu and Rohana (2016) investigated the impact of Commercial Agricultural Credit Scheme (CACs) on poverty alleviation in Niger State. Content analysis approach was utilized. The study concluded that there is an increase in the lending capacity of CACS without a corresponding increase in poverty alleviation which in other words has led to a decline in poverty in the state.

Likewise, Bodiseowei, and Tombofa (2016) assessed the effect of agricultural financing on agricultural output and macroeconomic output in the Nigerian economy which the study concluded that agricultural credit has a positive relationship between agricultural output and real GDP growth under the period reviewed. Abili (2018) examined development Finance Interventions of the Central Bank of Nigeria in Agriculture which it revealed that it has resulted to a reduction in the level of unemployment, increased food and national security as well as fast-track industrialization which would lead to the overall economic development of a country. Furthermore, Zwingina, Ahmed and Opusunju (2018) assess the impact of Intervention Fund on the Growth of Small and Medium Scale Enterprise in Abuja. Survey research design and primary data was used which was obtained through the administration of questionnaire to 393 respondents across the 6 Area Councils in Abuja. The study adopted regression technique. The findings shows that the FG intervention fund has contributed significantly to the growth of small and medium scale enterprise in the area of increase in the output and employment generation in Abuja.

Coker, Akogun, Adebayo and Mohammed (2018) assessed the implementation modalities of the anchor borrowers' programme in Nigeria. Content analyses and the strengths, weaknesses, opportunities and threats (SWOT) strategic planning tool was adopted. The study concluded that aspects of ABP execution plans are still blurred due to limited awareness roles of stakeholders are coinciding, poor updated database, lack of credible monitoring and evaluation structure, while cases of elite hijacking the programme is predominant. However, these reviewed works have tend to focused on the conventional intervention schemes which is interest based, while some are specific to a particular scheme like anchors borrowers program and CACs to mention but a few, little or no studies have tried to examined the Non-interest intervention schemes which is anchored based on Islamic jurisprudences. It is against this vacuum that the study was carried out.

Research Methodology

This study adopted a desk research method specifically the content analysis techniques. The information or data was obtained from secondary sources available on the theme which were mostly from Central bank of Nigeria (CBN) manuals/Guidelines, National Bureau of

Statistics Publications, Journals and relevant text books to mention but a few. More so, the study is limited to NIFI that operates in accordance with the Islamic jurisprudences. Additionally, the study employed a comparative analysis and deductive approaches or technique to systematically analyze the information obtained and drawing a conclusion.

Result and Discussions

Differences between the Non Interest and the Conventional Intervention funds

Under the CBN Non- Interest Banking Model, it is structured into two (2) namely; Non-interest according to Islamic Jurisprudence and Non-Interest according to other laws. This study will lay emphasis on Non-Interest according to Islamic jurisprudence to differentiate between both types of fund. Though, these differences mentioned in this study are not exhaustive.

Guiding Law: The Non- interest Intervention scheme is based on the guiding principle of divine law or the Islamic law which is referred to as the *Shariah*. The *Shariah* which emanated primarily from the Quran and the *sunnah*. Although, there are other secondary sources such as *Ijma* (consensus), *Qiyas* (Analogical deduction) to mention but a few. Whereas the conventional intervention funds is been guided or operated based on the secular law which is man-made in nature and such there is no divinity attached to it.

Pricing: The Non-interest intervention funds is not priced based on interest rate as interest is highly prohibited by the *Shariah* but rather it is based on the profit and loss structure which for example could be based on cost plus mark-up pricing, rentals whereas the conventional intervention funds is been priced based on the interest rate basis.

Investment Options: Investment or financing options available for Non-interest intervention scheme is restricted because it only finances products or services that are *halal* (permissible) which is *Shariah* compliance. Investment in intoxicants, pornography, arms to mention but a few are not allowed whereas the conventional intervention fund invest or finance products or services that are both *harm* (prohibited) or *halal* (Permissible) in nature as there is no restrictions.

Default Charge: Under both scheme there exist a default charge in situation where the customer fails to meet the terms and condition of the facility but what differentiate it is that under the Non-interest intervention funds, the default charge is been given as charity by the Non-Interest Participating Financial Institutions (PFIs) which cannot be recognized as part of their incomes whereas in the conventional intervention funds the charge belongs to the PFIs which is been recognized as part of the conventional PFIs income recorded in their books.

Security: Security which is seen as collateral is considered as cogent in the business of lending which also has the support of the CBN prudential guidelines. Both scheme recognize the provision of security but what differentiates the non-interest intervention funds from that of the conventional is that the former only accepts security that is *Shariah* compliance. For instance for Non-interest PFIs acceptable security includes Non-Interest Financial Assets such as CBN Safe Custody Account (CSCA), CBN Non-Interest Note (CNIN) and CBN Asset-Backed Securities (CBN-ABS) and *Sukuk* as Bonds are not acceptable since it is interest based whereas the conventional intervention funds can accept all securities.

Nature of Transactions: Under the Non interest intervention funds, funds are been disbursed through the CBN approved Non interest specialized products such as *Mudaraba, Ijara, Murabaha, Bai salam* to mentioned but a few which all have their own peculiarities after the approval by PFIs Advisory Committee of experts and their Board of directors whereas the conventional intervention scheme is been disbursed via the overdraft, term loan structure etc. after approval from only the Board of Directors to CBN for disbursement.

Beneficiaries: Under the Non-interest Intervention funds, the beneficiaries can be both Muslims and non-Muslims whereas the conventional intervention scheme is solely meant for Non-Muslims alone as Muslims cannot patronize it, due to the interest elements involved.

Risk Management: This is considered as a cogent point which differentiates both schemes. But however, under the non-interest intervention scheme, there exist risk and reward sharing between the lender and borrower which is buttressed by a legal maxim “*al ghum bil ghum,*” meaning “there is no return without risk” whereas under the conventional intervention scheme there is no risk sharing but rather risk transfer to the borrower alone.

Opportunities of the CBN Non Interest Intervention Funds

There exist several of opportunities from the scheme if properly explored that will have a significant impact on the Nigeria economy. Among these are as follows:-

Economic Growth: Economic growth is considered as a very cogent component of the macro-economic goals. This has to do with increase in output or in Gross Domestic Product (GDP). Therefore, adopting the non-interest intervention funds could go a long way to boost the GDP lines (Adamgbe *et al*, 2020) owing to the fact that it finances the critical sectors of the economy which is considered as the propellers of growth. This is further buttressed by the fact that there exist a strong nexus between financing and economic growth (Dori, 2016; Friday *et al*, 2016; Abili, 2018). In other words, it will aid sectorial performance in areas of Agriculture, Manufacturing, Information Communication Technology (ICT) to mention but a few because available statistics have shown that the CBN has intervene in key sectors such as manufacturing, electricity and gas, solar power and housing through the Real sector funds (N216.87 billion disbursed, 87 projects in which 53 was from manufacturing, 21 agriculture and 13 services), COVID-19 Targeted Credit Facility (N73.69 billion disbursed in which 120,074 benefited from financial support), AGEMEIS (N54.66 billion disbursed whereby 14,638 businesses were financed), Pharmaceutical and Health Care Support fund (N44.47 billion disbursed, 41 projects which 16 and 25 were from pharmaceutical and health services respectively) and Creative Industry financing Initiative (N2.93 billion, 250 SMEs benefited.) [CBN, 2020b]. Therefore, this will invariably on the aggregate turnaround or boost economic growth of the Nigerian economy through its multiplier effect despite the decline on year on year (YoY) basis of GDP from 1.87% in Q1 2020 when compared to 2.55% previous period (Nigeria Bureau of Statistics, 2020b).

Food Security: Food security is an important agenda of any government because food insecurity spells doom to any society. However, considering the geometrical rate at which Nigeria population is growing which is over 200 million (World Bank, 2019), it requires adequate food to take care of its population. This scenario necessitate the need to change the Nigeria economic structure by diversifying with focus on financing the real sector especially in the area of agriculture. Therefore, with the adoption of the Non-interest intervention scheme, it will complement the shortcomings of the existing conventional scheme by including the majority of Muslims/businesses with their potentials especially within the

agricultural value chain which had earlier being technically schemed out mainly due to faith or other reasons. Subsequently, this will result to an increase in not just agricultural output but output in general which invariably will lead to the achievement of food security and self-sufficiency (Bodisewei, and Tombofa, 2016). This move has been demonstrated by the conventional anchors borrowers programme (ABP) that focused on rice production which has led to about 90% reduction in the country's rice import bill (Nigeria Investment Promotion Commission, 2018). Therefore, all thing been equal, the Non-interest scheme will not be an exemption as it will served to close and surpass the gap.

Employment Creation: The unemployment rate in the country is an issue that call for urgent attention because it is considered as a time bomb awaiting to burst. The National Bureau of statistics Report (2020a) revealed that the unemployment rate of the country is about 27.1%. However, the public sector is to minimal to accommodate these teeming unemployed youths, thus the need for a vibrant private sector. Therefore, with the implementation of the scheme it will support the private sector which will further lead to the growth and development of the small and medium scale enterprises (SMEs) and industries to mention but a few. Hence, it will invariably create wealth, job opportunities for the teeming unemployed and as such this will reduce the unemployment rate in the country. If for instance, the conventional intervention scheme such as the commercial agricultural credit schemes (CACs) created 1,132,260 jobs along agricultural value chain, 89,860 direct job via SMERRF, 17,000 direct and indirect jobs created through the real sector support facility (RSSF) [Mudashiru, 2016], then the Non-interest intervention scheme could also perform at par or surpass its said target if all things been equal

Financial Inclusion: Financial inclusion has been one of the top agenda for the CBN to achieve because the rate of financially excluded persons (FEPs) in the country is alarming because as per the Enhancing Financial Innovation and Access [EFInA] report (2018) depicts that over 36.8% of Nigerian adult population are financially excluded out of which mainly are from the Northern part of the country which is mostly dominated by Muslims. Consequently, with the implementation of this Non Interest Intervention scheme, it will go a long way in reducing the number of FEPs especially from this region owing to the fact that they will be motivated to bank with the view that they would have access to finance which is line with their faith to boast their business activities.

Growth and Development of SMEs: Small and Medium Enterprises is considered as an engine of growth in any society which the Nigerian economy is not an exception. This sector constitute a large segment of the Nigerian economy because Statistics have shown that they constitute about 96% of the businesses in Nigeria out of which over 17 million are micro businesses and has contributed about 75% and 50% to national employments and the country's industrial output respectively (Small & Medium Enterprises Development Agency of Nigeria, 2020) but the major challenge confronting their growth and expansion is inadequate finance (Aremu and Adeyemi, 2011; Akingunola, 2011). Therefore, with these scheme and its peculiarities it will significantly assist in the entry of new SMEs and expansion of existing ones in the country which will invariably be an addition towards reducing unemployment, increase wealth creation, sectorial output and thus, lead to economic growth as buttressed in the works of Onwukwe and Ifeanacho (2011), Ahmed and Opusunju (2018), Aliyu (2013), Zwingina, Ahmed and Opusunju (2018) to mention but a few.

Reduce Poverty level: Poverty has been a global, regional, national and local issue that have attracted both Governmental and Non-Governmental Organization (NGO). In Nigeria, the

poverty level has been on the increase. The recent report from National Bureau of Statistics (2019) indicated that 40.1 percent which translates to 82.9 million Nigerians are living below the poverty line of about \$1.25 per day. Consequently, with the Non Interest Intervention scheme, it will result to an increase food production, all things been equal as demonstrated by its counterparts. For instance in ABP, rice yields increases from 2 – 3 tons/ ha to 5 - 7 tons/ ha, wheat yields increases from 1.0 – 1.3 tons/ ha to 2.5 – 3.0 tons/ ha (Abili, 2018). Additionally, with multiplier effect more wealth will be created, employment opportunities will be available due to influx and expansion of SMEs which by implication it will assist in improving the standard of living and invariably lead to a reduction in the country's level of poverty as demonstrated in the works of Abu and Rohana (2016).

Boast Research and Development: For any nation to achieve the required growth and development, the role of research and development cannot be relegated to the background. However, by adopting this variant of the intervention scheme, it will support inventors or creativity in different sectors like ICT and other relevant sectors because most inventors or creative works do have issue of capital to startup with and couple with their poor capacity to provide collaterals for the conventional banking loans, they are gradually schemed out. Thus, leading to the death of their ideas and projects. More so, the support to research and development will invariably create jobs and boast small and big businesses which will further lead to growth and development of Nigeria.

Moderate Net Trade: Nigeria as a country is still struggling to either achieve a balance or surplus trade position because it has been recording a deficit in its trade which implies that it imports more than its exports. Available report revealed that Nigeria has a deficit trade of USD497.5 million in Q12020 as compared with surplus of USD644.7million in the previous month (CEIC, 2020). Therefore, with the full implementation of the Non-interest intervention scheme, all things been equal, it will boast national output leading to food sufficiency. It will further complement the existing intervention scheme which has assisted in reducing some of country's import commodities (Adamgbe *et al*, 2020). For instance, in 2017, the import bills for rice, wheat and fish declines as thus; 67%, 33% and 83% (Abili, 2018). Consequently, if the synergy between both schemes persist in the long run, it will end up moderating the country's trade position because there will be more export and less import from trading partners.

Boast Infrastructural Development: Nigeria infrastructure is not in good shape as there is a huge gap which requires about \$14 billion annually (Karls, 2015) to bridge. This condition became worsen due to her growing population as the existing infrastructure is been overstretched especially the health facilities, power, ICTs to mention but a few. Therefore, the adoption of this scheme will highly support the existing conventional scheme which has served as a boast to certain key sectors like the power sector. For instance, a total 1,374megawatts (MW) of electricity have been generated through the Power and Airline Intervention Fund (PAIF). These consist 478MW on-grid, 895.8MW off-grid (captive and Independent Power Plants) and 2.4MW from renewable energy (Mudashiru, 2016; Abili, 2018). Consequently, with the bouquets of Non-interest intervention schemes available for the real sector, it will gradually assist in bridging the country's infrastructural gap.

Increase in Foreign Exchange earnings: Agriculture has been Nigeria's major source of foreign earnings up till 50s and the sector was abandon due to the discovery of oil. Having faced with the challenges of oil fluctuation in a lopsided mono-economy necessitate the need to revert to agriculture which the country have enough comparative advantage in order to cushion the effect of oil prices which we don't have control over. Therefore, the intervention

scheme will assist in bridging the funding gap witness in the agricultural sector and other sectors. This will result to an increase in agricultural output (Adamgbe *et al*, 2020) as well as grows the country's potentials to export her surplus in other to earn foreign exchange. By implication, it will serve as a buffer or support to the single stream of foreign exchange earnings from oil sector.

Resuscitate the Industrial Sector: The Nigeria's industrial sector is nothing to write home about as it is in a bad shape because many industries have been shut down while some are operating skeletally. With the full implementation of these schemes by PFIs especially the real sector support funds, textile funds to mention but a few it will go a long way to revive the ailing sector owing to the fact that there exist a positive relationship between financing and industrial sector performance (Akinwumi, Omotayo and Alani,2020). This will invariably be a boast to the GDP lines owing to the fact that both direct and indirect jobs will be created, increase industrial output, tax revenue and will have a spillover benefits among the value chain associated with this sector and other related sector.

Challenges in the application of CBN Non Interest Intervention Funds

Bureaucracy of PFI's: The role of the participating financial institution (PFI's) to the success of this scheme cannot be overemphasized since they serve as a special purpose vehicle. However, they could also contribute to the failure due to their bureaucratic procedures because despite the fact the CBN has issued guidelines to comply with, PFI's has to domesticate these guidelines to fit into their credit policy especially their risk acceptance criteria before implementing. Once, it is done, the approval for the disbursement of such funds follows the bank internal credit processes which in most cases are sometimes delayed which could be as a result of the banks internal approval processes, human factor and system issues to mention but a few. This could affect the speedy approval and as well as turnaround time for disbursement of such funds.

Public Awareness: Awareness has been one of the challenges facing Non-Interest Banking and finance in Nigeria, thus the Non-Interest Intervention funds is not an exception as pointed out by Coker *et al* (2018). This poor awareness has created a lot of misconception, misrepresentation of this model of financing especially from the non-Muslim and few Muslim alike. More so, this has further degenerate because majority of prospective beneficiaries viewed the scheme as if physical money (cash) will be disbursed to them just as in the case of the conventional scheme. This implies that they do not understand the *modus operandi* of the Non-interest financing.

Branch Network: Non-interest banking and finance is still at its infant stage as most full fledged NIB have limited coverage across the country while some still have the regional operational licenses. It's only the conventional NIB that has advantage of its spread of its conventional arm. This inadequate branch network could serve as a challenge to the scheme as majority of the beneficiaries will not have access to the funds where PFIs do not have branches while some will faced with stress of documentations of establishing new banking relationship during the course of changing their banks to conventional NIB so as to enable them have access to the scheme.

Manpower Issues: Manpower is considered as an issue in NIB because the available qualified manpower are still not enough to take care of the growing adult population in the country as noted in the words of Adegbite (2011) that "there is a problem of shortage of professionally qualified personnel to operate interest free banks in Nigeria. What this means

is that with the limited branch network, the available staff in the existing NIB branches will be overstretched by the numbers of applications and as such it will invariably affects the counts and volume in the funds disbursed.

Inadequate infrastructural Facilities: There exist infrastructural deficit in Nigeria as there are no good road network, steady power supply, health care facilities, storage, ICT facilities to mention but a few as this will affect the scheme (Mudashiru, 2016; Abili, 2018) and as well as the growth and development of businesses. This is because it increases business overhead cost and as well as the cost of doing businesses. Hence, by implication, it will affect their level of their productivity, cash flow, pricing and invariably cripple their profits due to increased operating expenses, even if they have benefited from such scheme. This will consequently put to jeopardy the desired objectives of the scheme.

Underutilization of Funds: The funds or scheme could likely faced an issue of underutilization because if prospective beneficiaries get to understand the transaction dynamics of the scheme bearing in mind that physical money (cash) will not be disbursed. Individuals or businesses that are not sincere will likely pull back their request. More so, satisfying the terms and conditions of the scheme might be cumbersome for most businesses owing to their informal way of operating because most of them are not registered, they don't maintain adequate records to mention but a few and as such, they will technically be phased out from the scheme which will invariably lead to the underutilization of the funds.

Possible diversion of funds/proceeds: This challenge has always been one of the major risk facing loan business by banks (Onyiriuba, 2008) irrespective of the model of banking as this scheme might not be an exception because there could likely be a possible diversion of funds/proceeds or output by the beneficiaries from the original intent which it was initially requested for. This is against the notion that "Government money is a free money" and the Central Bank of Nigeria (CBN) which is also government agency is in charge. This bad credit attitude could increase the credit risk of the facility/scheme which could lead to large numbers of loan defaulters.

Security or Collateral Issues: Despite the fact that the collateral requirement is a bit flexible in the guideline, the PFIs could go the extra mile to secure the facility in line with their internal credit policy since they share part of the risk. This situation could make the collateral requirement stringent for customers to comply with, thus discouraging them from processing the loan further. More so, on the part of the government they are expected to provide an Irrevocable Standing Payment Order (ISPO) duly signed by the State Governor, Commissioner for Finance and State Accountant General or Honourable Minister and Director of Finance in the case of FCT. This is an issue because getting the consent of Governors in most cases is difficult as they don't commit themselves personally or directly in financial transactions and this could end up delaying the processing of such request.

Recovery issues: One major challenge in granting loan is not disbursement but recovery. This could be a serious issue the NIB intervention scheme could face owing to the fact that it is considered as a free money and as such the beneficiaries might intentionally divert the proceeds/output or fictitiously present the business or asset financed as if the condition is bad to mention but a few. All these deceptions are targeted not to service the facility and this will invariably affect the recovery on the facility.

Possible delay in the disbursement of funds by PFIs: Another challenge the scheme could face is the possible delay in disbursement of funds by the PFIs (Abili, 2018). This is because as soon as the PFIs approves the facility to CBN, the funds are approved and the PFIs are invariably credited with the amount. Such amount is viewed by the PFIs as deposit which could be beneficial to them in terms of their balance sheet position and also trading. This could lure them to delay in applying the funds to the customer for the purpose it is meant for.

Possible connivance with bank officials: This is considered as a challenge that will becloud the scheme because the so-called Nigerian factor syndrome still exist in the banking industry. This connivance could be in form of perversion of the credit process, giving fictitious credit monitoring report since they are in frontline. In some instances they could demand for gratification from customers for these favours and since the prospective beneficiaries are desperate, they can go any length to find their way out or lure this bank officials. By such action, repayment and recovery of such facility is already put to jeopardy.

Refinancing Existing asset: The fact that Non interest intervention funds do not avail cash to beneficiaries which is the direct opposite of the conventional intervention funds. Customers will fraudulently apply for refinancing their existing asset so as just to have access to physical cash, this could end up jeopardizing the facility. However, these can rarely be possible if there are no collusion between the customers, the bank officials and the vendor.

Equity Contribution Issues: In the Non-Interest intervention scheme, equity contribution ranges between 0-30 percent which varies according to business category. This is considered as a challenge because it will be difficult for some business owners to raise such equity amount owing to the fact of the impact of Covid-19 on their businesses. Consequently, they will prefer to channel the said equity amount into their businesses since it will attract no cost and to operate on a low scale with the hope of expansion in the future.

Conclusion and Recommendations

The emergence of the Non- Interest intervention funds as part of the several funds designed by the Central Bank is a welcome development as it have created a level playing ground for all stake holders especially the Muslims population and NIBs in the country as they were earlier skimmed out from the conventional intervention scheme. Although, certain milestone have been achieved from the conventional scheme, therefore the Non-interest intervention scheme will not be an exception as it will highly complement the grey areas which the conventional system could not explore due to one reasons or the other. The study therefore concluded that the Non interest scheme will have a significant impact on Nigeria's development. From the forgoing, the study made the following recommendations as thus: -

- i. PFIs needs to reduce their bureaucratic or approval processes for the scheme so that it does not pass through same routes like their internal loan products as this will go a long way to ensure speedy up approval and disbursement.
- ii. The PFIs should ensure that they open additional branches in locations where they do not have presence or they can use their banking agents on the interim to process request from beneficiaries.
- iii. PFIs should recruit and train their staff or agents on the scheme so that they can be better equipped to process customers transactions and enlightened their customers appropriately.

- iv. PFIs and CBN is to intensify efforts in creating awareness especially in local dialects through televisions, Radios, Pamphlets, road shows, engaging association leaders as this will go a long way to address the issue of public awareness.
- v. There should be adequate monitoring by all stakeholders to at all levels to ensure that infractions or frauds in credit processes are not tolerated and individuals, staff or PFIs found wanting should be properly sanction according to the law.
- vi. There is need to create room for Governors or Ministers delegate in case of FCT that can sign the collateral documents especially the irrevocable standing payment order (ISPO) in order to save the stress of obtaining the consent of the substantive Governor or Minister.
- vii. There is need to reduce the equity contribution of certain scheme that are 30% to at least 10-20% taking into cognizance the effect of Covid-19 on their business cash flow.

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E-Banking System and Financial Performance in Nigerian Banking Sector



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Abstract: *In today's competitive global environment, technology is an essential element of a bank's success and overall growth. Consequently, profitability and performance can be significantly hindered by high levels of challenges experienced in the work environment and this necessitated the adoption of technology. The study evaluates the effect of electronic banking system on the performance of commercial banks. The study adopted a qualitative approach to explore the subject matter. The findings shows that electronic banking plays a vital role in deepening performance and profitability of most banks. Electronic banking has huge prospects considering the various forms through which it can be used to encourage customer patronage and lessen the burden faced by customers in the banking hall. Hence, the advent of technology has reshaped operations and established efficiency across board. From the literature, it was observed that any organization that is not willing to embrace the prospects of technology most especially banks may find it difficult to match the high volume of competition and may eventually be forced out of business. Electronic banking has numerous opportunities to earn profit if rightly designed to meet the prevailing challenges and expectations of customers. The study recommended that banks must be focused in terms of their needs and using the right technology to achieve goals, rather, than acquiring technology of internet banking because other banks have it. Government participation in ensuring focused telecommunication industry must be visible to reduce or remove avoidable costs of implementing e-commerce and internet.*

Keywords: Customers, E-Banking, Efficiency, Performance, Profitability, Technology

Introduction

The world has witnessed an information and technological revolution. According to Siam (2012) this revolution has touched every aspect of people's life including banking. Such changes and development have impacts on services quality, future of banking activities, and consequently, it is continually competition ability in the world markets since going along with technology is one of the most important factors of economic organizations success in general and banks in particular. This motivates banks to spend more on technology and information to achieve maximum returns and attracting large number of clients. Furthermore, banks have to provide an excellent service to customers who are sophisticated and will not accept less than above average service. Thus, the issue of service marketing in general, and banking services in particular has become one of the most important and modern directions which have witnessed a substantial expansion during the last years in almost all societies.

This is because the increasingly significant role which banking services have with the widening and variety that these services are characterized with, thus banking services have touched most aspects of contemporary societies life and activities (Stevens, 2002).

The banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate. Information and communication technology (ICT) is at the center of this global change curve of electronic banking system today. Stevens (2002) asserted that banks have over the time been using electronic and telecommunication networks for delivering a wide range of value added products and services, managers in banking industry cannot ignore information systems because they play a critical impact in current banking system, they point out that the entire cash flow of most fortune banks are linked to information system. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness banking. According to Sumra et al. (2011), introduction of electronic banking has revolutionized and redefined the ways banks were operating and the number of banks that offer financial services over the internet is increasing rapidly. Technology is now considered as the main contribution for the organizations' success and as their core competencies. So the banks be it domestic or foreign are investing more on providing services to their customers with the new technologies through e-banking, mobile banking, ATM, electronic funds transfer, account to account transfer, paying bills online, online statements and credit cards etc. are the services provided by banks. By using transactional websites, customers can check account balances, transfer funds, pay (and perhaps receive) bills, apply for loans, and perform a variety of other financial transactions without leaving their home or place of business. Banking through internet is considered as a complimentary delivery channel for the services rather than a substitute for the brick and mortar banking branches.

ATM banking is one of the earliest and widely adopted e-banking services in Nigeria (Nwankwo, et al. 2009). However, according to an annual report by Central Bank of Nigeria, its adoption and usage has been surpassed by mobile banking in the last few years (CBN, 2012). The tremendous increase in number of people adopting M-banking has been attributed to ease of use and high number of mobile phone users. This is consistent with the theory of consumer choice and demand as conceptualized in Agu and Kauffman (2008) in relation to mobile payments. There is also a growing partnership in financial institution and non-financial service providers where consumers through use of e-banking and other e-commerce services such as M-banking can transact and clear utility bills through shared banks' electronic platforms.

Therefore, this study is an attempt to examine the effect of online banking on the performance of commercial banks.

Electronic banking has produced changes in the structure of bank income. As a result of increased competition that has lowered margins in lending operations. Banks have diversified their sources of income and rely increasingly on income from fees services rather than interest rate spreads. Fees charged for services include typical banking activities like payment transactions, safe custody and account administration. These activities are, in general, less volatile than fees and commissions charged on activities which are affected by economic and cyclical developments. According to Malhotra and Singh (2004), banking through e-banking

has emerged as a strategic resource for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labor intensive method with automated processes thus leading to higher performance and profitability.

Samuel (2006) investigated the role of electronic banking services on the profits of Nigerian banks. He investigated the reasons behind providing electronic banking services through the internet and their impact on banking services in general and banks profitability. He concluded that the effect of electronic banking services on banks profitability is negative in the short run because of costs and the investments the bank carry in order to have the technical and electronic infrastructure in place, training the employees to be skilled and competent but will be positive on the long run. Davenport (2003) and Oshikoya (2007) and Jean-Azam (2006) suggest that investment in ICT requires complementary investments in skills, organization innovation. Investment and change entails risks and costs which might reduce bank profits in the short run.

Studies by Kariuki (2005) showed the positive impacts of ICT on their banking performance using bank market growth and profits as measure of performance. He established that banks those with high profit growth are more likely to be using greater numbers of advanced ICTs. He concluded that e-banking leads to higher profits though in long-term but not in short-term due to high ICT investment cost. Kingoo (2011) investigated the relationship between e-banking and financial performance of commercial banks in. The study was conducted in the 43 commercial banks in Nigeria.

Despite the potential benefits of ICT and e-commerce, there is still debate about whether and how their adoption improves bank performance. Several attempts have been made to investigate the effect of electronic banking on bank performance. All these studies used profit and turnover as measures of bank performance as well number of cards issued and customers signed up in the e-banking platform. The study sought to fill the gap by assessing the effect of electronic banking on financial performance of commercial banks by the use of other relative measure such as profitability and market growth.

Following this introduction, the rest of the paper is organized as follows. Section two makes a review of the literature, section three presents the data and methodology used for the study. Section four contains data presentation, results and discussions. Conclusion and recommendations featured in section five.

Literature Review

Electronic Banking according to Okoegwale (2012) is providing of banking and financial services via an internet device. It has to do with the ability to carry out banking and stock market dealings and also the ability to carry out some specific account functions. And it is popularly referred to in Nigeria as E-Banking, it entails checking of balance, transactions, payment. This is made possible by internet application. E-Banking in Nigeria began, when customers began to carry out transactions via the internet. Now almost all the Nigerian Banks practice this form of service which were mostly only accessible in the banking hall. Electronic banking has a significant role to play in the financial activity in Nigeria according to Enhancing Financial Innovation & Access (2010), which is an organization, a promoter of financial inclusion in Nigeria. The internet seems to be the most feasible means of providing another form of Branch Banking in Nigeria to a wider population with its ability to deliver services at any point in time and any place, (Arumugam 2008) agrees with this.

Irrespective of how good it might seem, interoperability seems to be the basic shortcomings that seem to still befall it, that is; the capacity for a service, piece of equipment etc., to be operated by different forces or groups. This is as a result of the rapid increase in technology which determines how efficient certain internet applications will work. Another pitfall is in the Application distribution for Electronic Banking, some banks are faced with Challenges in this aspect, while some futuristic Banks are revamping and reducing their over reliance on the settings of mobile phone operators. Given that customers' mobile devices are fixed to a particular setting, mostly which favours entertainment, it is not aligned to that which supports the electronic banking application. The Nigerian banks hoping to gain head way must have their eyes set above the operator's settings which might not be exact or slow in its arrival, or may not necessarily be available.

It would be advisable for banks seeking competitive advantage to make available a scenario where customers can download or have this internet application on their devices over-the-air or through some designated places without necessarily having to come to the bank, this would go a long way to boost the availability and wide spread of this form of banking.

Electronic banking or e-banking refers to an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution (Ombati, 2011). E-banking is also the use of electronic means to deliver banking services, mainly through the Internet. The term is also used to refer to ATMs, telephone banking, use of plastic money, mobile phone banking and electronic funds transfers.

According to Abaenewe, Ogbulu and Ndugbe (2013), electronic banking is the conduct of banking business electronically which involves the use of information communication technology to drive banking business for immediate and future goals. Electronic banking system is seen to be an innovative service delivery mode that offers diversified financial services like cash withdrawal, funds transfer, cash deposits, payment of utility and credit card bills, cheque book requests, and other financial enquiries, (Onyedimekwu & Oruan, 2013).

Similarly, Imiefoh (2012) sees electronic banking as an umbrella term for the process by which a customer perform banking transactions electronically without visiting a brick-and-mortar institutions. That is, automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels.

Electronic banking generally implies a service that allows customers to use some forms of computer to access account-specific information and possibly conduct transactions from a remote location like home or workplace, (Odulaja, 2012).

Elisha (2012) suggested e-banking has become popular because of its convenience and flexibility, and also transaction related benefits like speed, efficiency, accessibility and so on. He described e-banking as the term used for new age banking system, it could also be called online banking and it is called online banking and it is an outgrowth of PC banking. That is, a banking which includes the systems that enable financial institution customers, individuals or businesses, to access accounts transacts business, or obtains information on financial products or services through a public or private network, including the internet or mobile phone. Further, electronic banking is referred to as the process of using the internet as delivery mode for the provision of services like opening a deposit account,, electronic payment bill payments, and online transfers. These services can either be provided by the banks having physical offices or by creating a web site and providing services through that or services can be provisioned through a virtual bank as well. The internet is used as strategic and differentiating channel to offer high valued financial services and complex products at the

same time or improved quality at lower costs without physical boundaries and to cross sell products like credit cards and loans (Elisha, 2012).

Types of E-banking

According to Elisha (2012), the following are the various forms of electronic banking:

a. Mobile/SMS Banking

Mobile Banking refers to provision and availing of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information. According to Meute (2010), mobile Banking consists of three inter-related concepts: mobile accounting, mobile brokerage and mobile financial information services. With mobile technology banks can offer a variety of services to their customers such as doing funds transfer while traveling, receiving online updates of stock price or even performing stock trading while being stuck in traffic. Smart phones and 3G connectivity provide some capabilities that older text message-only phones do not (Shan, 2006).

b. Telephone Banking

Telephone banking is a service provided by a financial institution, which allows its customers to perform transactions over the telephone (Vila et al., 2013). Most telephone banking services use an automated phone answering system with phone keypad response or voice recognition capability. To guarantee security, the customer must first authenticate through a numeric or verbal password or through security questions asked by a live representative.

With the obvious exception of cash withdrawals and deposits, it offers virtually all the features of an automated teller machine: account balance information and list of latest transactions, electronic bill payments, funds transfers between a customer's accounts, etc. Usually, customers can also speak to a live representative located in a call center or a branch, although this feature is not always guaranteed to be offered 24/7. In addition, telephone banking representatives are usually trained to do what was traditionally available only at the branch: loan applications, investment purchases and redemptions, checkbook orders, debit card replacements, change of address, etc.

c. Electronic funds transfers

Electronic funds transfer or EFT is the electronic exchange or transfer of money from one account to another, either within a single financial institution or across multiple institutions, through computer-based systems (Bahia, 2007). Electronic Funds Transfer (EFT) is also a system of transferring money from one bank account directly to another without any paper money changing hands. One of the most widely-used EFT programs is Direct Deposit, in which payroll is deposited straight into an employee's bank account, although EFT refers to any transfer of funds initiated through an electronic terminal, including credit card, ATM, and point-of-sale (POS) transactions. It is used for both credit transfers, such as payroll payments, and for debit transfers, such as mortgage payments.

According to Bahia (2017), transactions are processed by the bank through the Automated Clearing House (ACH) network. The growing popularity of EFT for online bill payment is paving the way for a paperless universe where checks, stamps, envelopes, and paper bills are obsolete. The benefits of EFT include reduced administrative costs, increased efficiency, simplified bookkeeping, and greater security. However, the number of companies who send and receive bills through the Internet is still relatively small.

d. Self Service (PC) Banking

Self-service banking for consumers and small business owners, enabling users to perform many routine functions at home by telephone, or cable modem connection. Home banking, also called on-line banking or PC banking, gives consumers an array of convenient services: they can move money between accounts, pay bills, check balances, and buy and sell mutual funds and securities. They can also look up loan rates and see if they qualify for a credit card or mortgage.

e. POS Banking (Credit and Debit cards)

It is a system that uses a computer terminal located at the point of sales transaction so that the data can be captured immediately by the computer system. It is also a retail payment system that substitutes an electronic transfer of funds for cash, cheques or drafts in the purchase of retail goods and services (Gerlach, 2011). In a POS system, sales and payment information are collected electronically, including the amount of the sale, the date and place of the transaction, and the consumer's account number. If the transaction is done on a bank credit or debit card, the payment information is passed on to the financial institution or payment processor, and the sales data is forwarded to the retailer's management information system for updating of sales records. According to Gerlach (2000), much of the actual processing volume is for credit card sales.

f. Internet banking

Internet banking, sometimes called online banking, is an outgrowth of PC banking (Egland et al., 2008). Internet banking uses the Internet as the delivery channel by which to conduct banking activity, for example, transferring funds, paying bills, viewing checking and savings account balances, paying mortgages, and purchasing financial instruments and certificates of deposit. An Internet banking customer accesses his or her accounts from browser software that runs Internet banking programs.

g. ATMs

An automated teller machine (ATM), also known as a automated banking machine (ABM) or Cash Machine is a computerized telecommunications device that provides the clients of a financial institution with access to financial transactions in a public space without the need for a cashier, human clerk or bank teller. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip that contains a unique card number and some security information such as an expiration date. According to Thompson (1997), Authentication is provided by the customer entering a personal identification number (PIN). Using an ATM, customers can access their bank accounts in order to make cash withdrawals, credit card cash advances, and check their account balances as well as purchase prepaid cell phone credit.

h. Interactive TV Banking

TV-Banking has to do with exploiting the television' banking service delivery channel. The commercial applications that can be further built on top of this platform could enable users to perform T-Commerce activities such as paying for teleshopping and making bill payments (Vila et al., 2013).

i. Branchless Banking

Branchless banking is a distribution channel strategy used for delivering financial services without relying on bank branches. While the strategy may complement an existing bank branch network for giving customers a broader range of channels through which they can

access financial services, branchless banking can also be used as a separate channel strategy that entirely forgoes bank branches (Thompson, 2014). Examples of branchless banking technologies are the Internet, automated teller machines (ATMs), POS devices and mobile phones. Each of these technologies serve to deliver a set of banking services and are part of distribution channels that may be used either separately or in conjunction to form the overall distribution channel strategy.

For example, most banks uses the Internet, ATMs, POS devices, EFTPOS devices, and mobile phones as technologies to deliver its banking services through a combination of distribution channels including stationary bank branches, mobile bank branches, ATMs, bank agents, Online banking, and mobile banking. All these are distribution channels, yet only the last four are branchless distribution channels and strategy (Access Bank refers to its branchless banking channels as alternate delivery channels)

Risks of E-Banking

Electronic banking is faced by a number of risks for example:

i. Operational risk - The reliance on new technology to provide services makes security and system availability the central operational risk of electronic banking. Security threats can come from inside or outside the system, so banking regulators and supervisors must ensure that banks have appropriate practices in place to guarantee the confidentiality of data, as well as the integrity of the system and the data (International Monetary Fund, 2012).

ii. Reputational risk - Breaches of security and disruptions to the system's availability can damage a bank's reputation. The more a bank relies on electronic delivery channels, the greater the potential for reputational risks. If one electronic bank encounters problems that cause customers to lose confidence in electronic delivery channels as a whole or to view bank failures as system wide supervisory deficiencies, these problems can potentially affect other providers of electronic banking services. In order to manage such risks measures should be put in place to oblige the Directors and senior management to document and explain the strategic decisions of how the bank will develop their e-banking services. Management supervision should surround security control infrastructure; safeguard the e-banking systems and data from internal and external threats (Carlson and Lang, 2001). The security challenges of e-banking services are greater than those of conventional banking services. These challenges can be addressed through establishment of relevant authorization privileges and authentication measures, clear audit trail for e-banking transactions and put up measures to preserve confidentiality of e- banking information. (Ombati et al 2011).

Electronic Banking on Financial Performance

Commercial banks assaulted by the pressure of globalization and competition from non-banking functions must find new ways to add value to the services. The question “what drives performance?” is at the top in understanding superior performance and hence striving for it. Substantial research efforts have gone into addressing this question, starting from the strategic level and going down to operational details. Customers in developing economies seems to keep the “technological factors” of services as the yardstick in differentiating good & bad services and the human factor – the employees seem to play a lesser role in discriminating the quality of service for banks. The variation in services offered by the banks develops the excellence for service quality. Banking is no longer regarded as a business dealing with money transaction alone, but it also seem as a business related to information on financial transaction (Padwal 2015). As electronic banking is becoming more prevalent, so level of customer satisfaction is also changing the scenario of technological environment. Informational technology in form of e-banking plays a significant role in providing better

services at lower cost. Several innovative IT based services such as Automated Teller Machines (ATM), Internet banking, Smart cards, Credit Cards, Mobile banking, Phone banking, Anywhere-Anytime banking have provided a number of convenient services to the customer so as the service quality improves, the probability of customer satisfaction increases. Increase in customer satisfaction in turn increases the mutual understanding, customer retention and a bond of trust between the customer and bank. The banks which are providing these services at large extent to customers are more reputed in the eyes of customers. But at the same time technology based product is different in public and private sector banks.

E-banking is an improvement over traditional banking system because it has reduced the cost of transaction processing, improved the payment efficiency, financial services and the banker-customer relationship. The relationship between e-banking and service quality can be studied with the level of satisfaction. The customer satisfaction is the function of customer expectation level and service quality level provided by the organization. E-banking plays a pivotal role in giving satisfaction to the customers because e-banking fills the gap between the expected and perceived service quality. So in order to fill this gap, banks should find ways of making electronic services more accessible and by allowing the customer to verify the accuracy of the e-banking transactions. On the whole we can say that e-banking has become pre-imminent method of carrying the banking transaction and increase the customer satisfaction (Sathye, 2015).

Siam (2016) stated that, banks are using the Internet as a strategic weapon, leveraging it as a distribution channel to offer complex products at the same quality they can provide from their physical branches, at a lower cost, to more potential customers, without boundaries. The online channel enables banks to offer low-cost, high value-added financial services and also benefit from the promotional opportunity to cross sell products such as credit cards and loans. In saving time and money for users, banks offer online banking as a less expensive alternative to branch banking. In addition, on-line banking enables banks to acquire information on consumer habits and preferences, for later marketing purposes. An expanding customer base and transaction cost savings are major benefits for banks (Siam, 2006).

According to Malhotra and Singh (2004), banking through internet has emerged as a strategic resource for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labor intensive methods with automated processes thus leading to higher productivity and profitability. However, to date researchers have produced little evidence regarding these potential changes. Nonetheless, recent empirical studies indicate that internet banking is not having an independent effect on banking profitability, although these findings may change as the use of the internet becomes more widespread. More recently, a wider array of financial products and services have become available over the internet (Malhotra and Singh, 2014), which has thus become an important distribution channel for a number of banks. Banks boost technology investment spending strongly to address revenue, cost and competitiveness concerns. For some activities, banks hope to see a near-term impact on profitability. Other investments are motivated more by a desire to establish a competitive position or avoid falling behind the competition.

Internet technology holds the potential to fundamentally change banks and the banking industry. An extreme view speculates that the internet will destroy old models of how bank services are developed and delivered (DeYoung, 2011). The widespread availability of internet banking is expected to affect the mixture of financial services produced by banks, the

manner in which banks produce these services and the resulting financial performances of these banks. Whether or not this extreme view proves correct and whether banks take advantage of this new technology will depend on their assessment of the profitability of such a delivery system for their services. In addition, industry analysis outlining the potential impact of Internet banking on cost savings, revenue growth and risk profile of the banks have also generated considerable interest and speculation about the impact of the Internet on the banking industry (Berger, 2013).

Measures of E-Banking and Financial Performance

E-banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution. The following are the indicators of e-banking when used by customers and commercial banks: personal computer (PC) banking, Internet banking, virtual banking, online banking, home banking, remote electronic banking, and phone banking. PC banking and Internet or online banking are the most frequently used designations.

The Basle Committee on Banking Supervision of the Bank of International Settlements (BIS) has recommended using capital adequacy, assets quality, management quality, earnings and liquidity (CAMEL) as criteria for assessment of financial performance (ADB 2012). The sixth component, market risk (S) was added to CAMEL in 1997 (Gilbert, Meyer and Vaughan 2000). CAMELS framework is a common method for evaluating the soundness of financial institutions including commercial banks. This system was developed by regulatory authorities of the U.S banks. The Federal Reserve Bank, the Comptroller of the Currency and the Federal Deposit Insurance Corporation all use this system (McNally 2016). Monetary authorities in most of the countries are using this system to check up the health of an individual financial institution. CAMELS framework system looks at six major aspects of a financial institution: capital adequacy, asset quality, management soundness, earnings, liquidity, and sensitivity to market risk (Hilbers, Krueger and Moretti 2010).

Capital Adequacy

Capital adequacy ultimately determines how well commercial banks shocks to their balance sheets. Thus, it tracks capital adequacy ratios that take into account the most important financial risks, foreign exchange, credit, and interest rate risks by assigning risk weightings to the institution's assets. Leverage ratio can be used to measure the capital adequacy of a bank. This is the ratio of bank's book value of capital to the book value of its assets. The higher ratio shows the higher level of capital adequacy. The leverage ratio stated in the foregoing discussion is simple capital to assets ratio. In other words, assets are not risk adjusted. The 1993 Basel Accord enforced the capital ratio to risk adjusted assets of commercial banks. According to this accord, capital must equal to or exceed 4 percent of the risk weighted assets of the commercial banks.

Asset Quality

Credit risk is one of the factors that affect the health of an individual commercial bank. The credit risk depends on the quality of assets held by an individual commercial bank. The quality of assets held by a commercial bank depends on exposure to specific risks, trends in non-performing loans, and the health and profitability of bank borrowers especially the corporate sector. We can use a number of measures to indicate the quality of assets held by commercial banks. ADB suggests these measures—loan concentration by industry, region, borrower and portfolio quality; related party policies and exposure on outstanding loan, approval process of loan, check and balance of loans; loan loss provision ratio; portfolio in

arrears; loan loss ratio; and reserve ratio-of checking the quality of assets of a commercial bank (ADB 2012).

Management Quality

Sound management is key to bank performance but is difficult to measure. It is primarily a qualitative factor applicable to individual institutions. Several indicators, however, can jointly serve as an indicator of management soundness. Expenses ratio, earning per employee, cost per loan, average loan size and cost per unit of money lent can be used as a proxy of the management quality. ADB recommends cost per unit of money lent as a proxy of management quality. But this cannot be used as an indicator of management quality. Since the data on amount of the total loan mobilized during a particular financial year is not available in published financial statements and annual reports.

Earning Performance

Earning capacity or profitability keeps up the sound health of a commercial bank. Chronically unprofitable commercial bank risks insolvency on one hand and on the others, unusually high profitability can reflect excessive risk taking of a commercial bank. There are different indicators of profitability. Return on assets, return on equity, interest-spread ratio, earning-spread ratio, gross margin. Commercial Banks operating profit margin and net profit margin are commonly used profitability indicators.

Liquidity

Liquidity risk threatens the solvency of financial institutions. In the case of commercial banks, first type of liquidity risk arises when depositors of commercial banks seek to withdraw their money and the second type does when commitment holders want to exercise the commitments recorded off the balance sheet. Commercial banks have to borrow the additional funds or sell the assets at fire sale price to pay off the deposit liabilities. They become insolvent if sale price of the assets are not enough to meet the liability withdrawals. The second type of liquidity risk arises when demand for unexpected loans cannot be met due to the lack of the funds. Commercial banks can raise the funds by running down their cash assets, borrowing additional funds in the money markets and selling off other assets at distressed price. Both liability side liquidity risk (first type risk) and asset side liquidity risk (second type risk) affect the financial performance of commercial banks adversely. But maintaining the high liquidity position to minimize such risks also adversely affects the profitability of FIs. Return on highly liquid assets is almost zero. Therefore, financial institutions should strike the trade-off between liquidity position and profitability so that they could maintain their health sound. Commercial bank's liquidity exposure can be measured by analyzing the sources and uses of liquidity. In this approach, total net liquidity is worked out by deducting the total of uses of liquidity from the total of sources of liquidity. In addition, different liquidity exposure ratios such as borrowed funds to total assets, core deposit to total assets, loans to deposits, and commitments to lend to total assets are used to measure the liquidity position of a commercial bank (Saunders and Cornett 2014).

Sensitivity to Market Risk

Commercial banks are increasingly involved in diversified operations such as lending and borrowing, transaction in foreign exchange and selling off assets pledged for securities. All these are subject to market risk like interest rate risk, foreign exchange rate risk, and financial asset and commodity price risk. The health of a commercial bank is more sensitive to market

risk is more hazardous than that of less sensitive. Foreign exchange risk, interest rate risk, equity price risk, and commodity price risk are the indicators of sensitivity to market risk.

The study adopted technology acceptance theory propounded by Davis, Bagozzi, and Warshaw (1989). The trio explained the conceptual model that users' intention or acceptance degree towards information system or new technology. TAT is constructed on the foundations of perceived usefulness and perceived ease of use. Perceived usefulness refers to individual belief to improve the degree of job performance through using particular new technology and information system. Perceived ease of use indicates how easy an individual learns how to operate or use new technology or information system (Davis et al., 1989; Gefen et al., 2003). The model places more emphasis on how perceived ease of use would positively affect perceived usefulness. Exogenous variables such as environment are also the antecedent that induces perceived usefulness and perceived ease of use. Thus, TAT is based on both important perceptive factors as perceived usefulness and perceived ease of use. TAT is widely applied on the research of information technology. Liu and Arnett (2000) examined the significant variables to build a successful website based on TAT theory. Gefen et al. (2003) combined TAT and rust to propose an integrated model for explaining online consumer behavior. Pavlou (2003) proposes e-commerce acceptance model of online consumers by separating and applying experiment designs and survey.

Follow-up studies such as Horst, Kuttschreuter and Guttering (2007) discusses whether or not the government of Netherlands should serve the public with electronic government like other countries do. The study integrates TAT factors, the experiences of the public, perceived risk and faith. The empirical results show that the principle of e-government is that people fully trust the governmental organization and that they highly identify with information technology. As a result of the empirical study, scholars find that TAT does not only apply to examine new information technology accept intention or behavior, but also ensures that TAT is suitable for the explanation of online user behavior issues (Liu & Arnett, 2000).

Conceptual Model

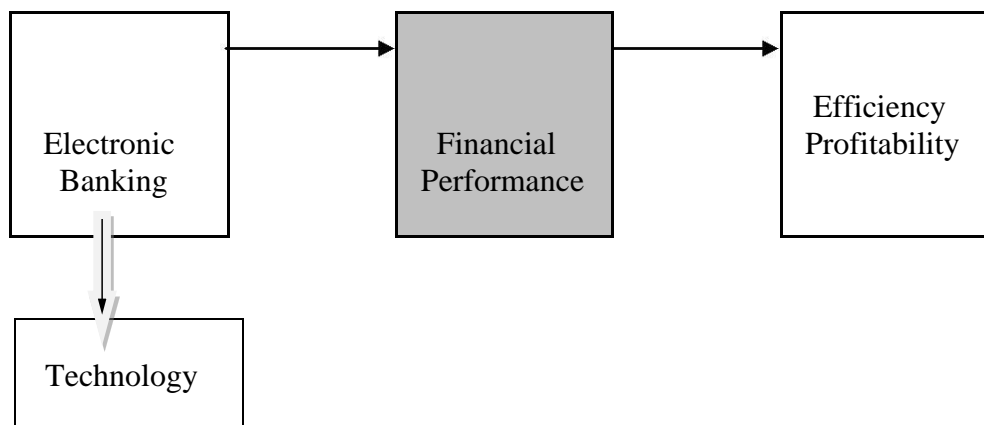


Fig 1: Conceptual Model of the Study
Source: Njuguna & Wanderi (2012)

The above model is evident to the contributory role of electronic banking as a major driving force for deepening financial performance anchored upon efficiency and profitability. Banks cannot attain their financial performance target in this modern day business world if utmost priority is not given to electronic banking with the intent to encourage both efficiency and

profitability. Fundamentally, wide presence of technology adoption of most banks will accelerate the potency of electronic banking to encourage efficiency and profitability during service delivery which will gravitate towards establishing financial performance.

Conclusion

The study was able to achieve the set objectives which sought to examine the effect of e-banking system on the performance of commercial banks. The study found that commercial banks have highly implemented e-banking. Though, it was stressed in the literature that the adoption of electronic banking has been slow due to impaired unavailability of infrastructure and lack of supportive legislation for internet banking in Nigeria (Nyangosi et al 2009). However the adoption of e-banking has enhanced performance of the banking industry due to increased efficiency, effectiveness and productivity. The study found that electronic banking has been adopted at a faster rate due to its convenience, accessibility and flexibility

Recommendations

The study reveals that e-banking increases the bank performance. In order to give the growing trends of information and communication technology (ICT) which involves e-banking and e-commerce in banks a vision in the right directions, the following strategies are recommended for further follow up and implementation;

- i. The banks must be focused in terms of their needs and using the right technology to attain profitability, rather, than acquiring technology of internet banking because other banks have it.
- ii. The adoption of electronic banking must be geared towards enabling efficiency in service delivery. This will tend to be a cost justification for its usage and a tool for enhancing profitability.
- iii. In other to make banking practices in Nigeria match global standards, regulatory authorities like Central Bank of Nigeria must stipulate minimum standards for the banks to follow to avert outdated technological infrastructures.
- iv. Training and manpower development is another major problem limiting growth of e-commerce in the country. Government must make right IT policy by ensuring that computer, communication equipment are locally manufactured to encourage consumer confidence in locally manufactured products.
- v. Government Policy that will guide against money laundering, fraud and security risks posed by e-banking must be consistent.
- vi. To counter the legal threat and security posed to net banking and e-commerce, the necessary legal codes backing the industry must be established by the regulatory body as well.
- vii. This study also recommends that commercial banks should expand their electronic services in a planned and well-articulated strategy for the long run, in order to have customer satisfaction and increase in banks profitability.

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Forecasting Nigeria's Exchange Rate Using SARIMA Modeling



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Abstract: Due to high and increasing rate of uncertainty in the foreign exchange market, there is the need for reliable and sophisticated models of forecasting the exchange rate series. This study is aimed at developing a model of exchange rate for Nigeria with higher data points, taking into cognizance its periodic seasonal component and uses the estimated model to make forecast. The study used Nigeria's monthly data for 1981:M1 to 2018:M12 sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin. Data was analysed using seasonal ARIMA model (SARIMA) which is an extension of autoregressive (AR) and moving average (MA) process in the popular Box-Jenkins methodology. With 456 data points, the study developed SARIMA (0,1,1) x (1,1,1)₁₂ from among the competing models based on its AIC and BIC values. The estimated model is found to be adequate in making forecast using a sample data for 2019. The estimated model is found to be adequate in making forecast using a sample data for 2019. Having predicted the worsening value of Naira along seasonal path, the study thus recommends that authorities should consider the seasonal component in designing monetary policies targeted at foreign exchange to stabilize the economy.

Keywords: Autoregressive, Exchange rate, Forecast, Modeling, Seasonality

JEL Classification Codes : C22, C51, E00, F31, E37,

Introduction

Exchange rate is the value of a country's currency in terms of that of the rest of the world. A bilateral comparison is the price of the currency of one country expressed in terms of the currency of another country. Currency is one of the most traded commodities in the world physically and electronically. Varenus (2017) described the foreign exchange market as the largest financial market in the world. With globalization, the exchange rate exerts strong impact on nations' macroeconomic variables such as the international trade, domestic trade, capacity utilization in manufacturing, economic growth and the like. Thus, it is imperative for economies to understand what causes exchange rate fluctuations so as to proactively design the consequential policy responses.

A country's exchange rate is one of the most closely monitored indicators, as fluctuations in exchange rates can have far reaching economic consequences (Ribeiro, 2016). The lingering financial turmoil all over the world demonstrates the urgency of perfect information of the exchange rates (Shim, 2000). Understanding the forecasting of exchange rate behaviour is important to monetary policy (Simwaka, 2007). Having established that exchange rate is one of the crucial macroeconomic indicators for any economy; Asadullah et al., (2020) opined

that investors, lenders, borrowers, people in business etc., are always keen to know about the trend of exchange rate near future because their investments and transactions are significantly affected by the fluctuation in exchange rates. It also affects the profit forecasting, capital budgeting plans and the foreign investment worth. In this regard, one of the important variables that have considerable influence on other socio – economic variables in Nigeria is the Nigerian naira / dollar exchange rate (Ismail, 2009).

Over the years, foreign exchange and its management in Nigeria has endured series of transformation. Moving from what CBN (2019) termed as officially pegged exchange rate system between 1970 and 1985 to a market-determined system since 1986, it is now determined through the foreign exchange market on the basis of demand and supply. However, the Naira continues to slide against major currencies. Between March and August 2020, the Naira fell by nearly a fifth of its value on the official exchange rate window, from 305 to the U.S. dollar to 379 on August 21, according to the CBN data for a roughly 24.3% decline. As at 10th of April, 2021, Naira is traded at the official rates of 380, 520.712, 451.3773 and 0.6769 USD, Pounds sterling, Euro and CFA respectively (CBN, 2021). The exchange rate crises and uncertainty according to Nwanma (2020) is concomitant to the country's fragmented exchange rate system which offers multiple rates at different windows that fueled speculative demand and arbitrage pressures. Apart from the official rate, the country operates Investors' and Exporters' (I&E) rate, otherwise known as the NAFEX Fixing, which serves investors and exporters. Others are bureau de change rate which serves individuals needing foreign exchange for personal and business travel, payment of school fees abroad and foreign medical treatment that sells close to N500 a dollar. Lastly, there is the parallel or "black market" rate serving the needs of multitudes that cannot easily access funds at the other windows, particularly speculators seeking to stock up on foreign currencies in anticipation of further Naira weakness.

In the financial as well as managerial decision making process, forecasting is a crucial element (Majhi et al, 2009). Most previous researches on forecasting of financial and economic variables using series of fundamental and technical approaches produced different results in the sample or out of sample (Musa et al, 2014; Onasanya & Adeniji, 2013).

Due to high and increasing rate of uncertainty in the foreign exchange market, Deka and Resatogluthere (2019) stressed the need for reliable and sophisticated models of forecasting financial series such as foreign exchange rate as well as inflation being one of the factors that determine the former in the foreign exchange market. While it is essential to understand the long term trends in the exchange rates for making strategic decisions like direct investment and building long term trade relations with certain countries, at the same time it is also necessary to understand if there are any seasonal effects on the exchange rate movement (Kumuda and Bhatt, 2016). Additionally, exchange rate dynamics in international trade and overall economic performance of all countries in general, requires a good forecasting tool. It is against this background that this study will examine seasonal characteristics of Nigeria's exchange rate using sufficient data points and build a model for predicting the series.

Following this introduction, the rest of the paper is organized as follows. Section two makes a review of the literature, section three presents the data and methodology used for the study. Section contains data presentation, results and discussions. Conclusion and recommendations featured in section five.

Literature Review

Exchange Rate is the price of some foreign currency in terms of a home currency (Govil, 2014; Lu, 2011; Mia & Rahman, 2019; Olakorode et al., 2018). The two conventions according to Govil (2014) are E: Price of home currency in terms of foreign currency and R: Price of foreign currency in terms of home currency giving: $E = \frac{1}{R}$. Yang & Zeng (2014) differentiates between the types of exchange rate describing nominal exchange rate as the price of a currency in terms of another currency. On the other hand, the real currency exchange rate as the price of the currency in real terms. However, Kipici and Kesriyeli (1997) categorized the definition of real exchange rate under two main groups. The first group of definitions is made in line with the purchasing power parity (PPP). The second group, on the other hand, is based on the distinction between the tradable and the non-tradable goods. Although they can coincide in some very special cases, these definitions usually give different results. Factors that are generally thought to influence exchange rates according to Pierce (1983) include a country's inflation rate, real economic growth rate, interest rates relative to the rest of the world, and private speculation.

The theories of exchange rate determination included but not limited to Balance of Payment Theory; Interest Rate Parity (IRP); Purchasing Power Parity Theory (PPPT); Mint Parity Theory; the Quantity Theory of Money, the Tightening Monetary Policy Theory; and the Interest Rate Parity (IRP).

This is anchored in the PPT. This is an economic theory used in determining the relative value of currencies, estimating the amount of adjustment needed in the exchange rate between countries, in order for the exchange rate to be equivalent to each currency's purchasing power (CBN, 2011). It recognizes inflation levels and trends as important determinants of exchange rate of a currency both in emerging and developed economies (Scott, 2008 cited in Nyoni, 2018). PPPT avers that a currency will lose value if there is a high level of inflation in the country or if inflation levels are perceived to be going up. This is attributed to the fact that inflation erodes the purchasing power, thus demand for that specific currency. According to Oleka et al (2014), a currency may sometimes strengthen when inflation rises due to expectations that the central bank of the country concerned will raise short-term interest rates to combat rising inflation. PPPT, as noted by Obadan (2006); concludes that the equilibrium exchange rate between two invertible paper currencies is determined by the equality of their purchasing power (that is, their relative prices).

Empirical review

There are several country-studies on modelling and forecasting exchange rate series. Most of the studies are tilted towards modelling local versus major convertible currencies US Dollar, Pound, Yuan and the like. For Nigerian Naira exchange rate series, Etuk (2013) used a seven-day differencing that yields new series with an overall slightly negative trend with no discernible seasonality. The findings reveal a seasonal moving average component of order one and the product of two moving average components: one seasonal and the other non-seasonal, both of order one. Hence a $(0, 1, 1) \times (0, 1, 1)_7$ SARIMA model is proposed. It is fitted and shown to be adequate for the data.

Etuk (2016) further used SARIMA methods to analyze a 179-point realization of daily exchange rates of the Chinese Yuan and the Nigerian Naira spanning from 18th October 2015 and 13th April 2016. The autocorrelation structure of the resultant series suggests the possibility of some SARIMA models. These include a SARIMA(0,1,1) \times (0,1,1)₁₂ and a

SARIMA(0,1,0)x(0,1,1)¹². Comparison on the basis of the information criteria AIC, Schwarz criterion and Hannan-Quinn criterion shows that the former model is the superior. The forecasting ability of the model was tested for 8 data points.

Other studies on Nigeria on this note were not able to adequately address the issue of seasonality inherent in the exchange rate series. These include, Nyoni (2018) that model and forecast the Naira / USD exchange rates over the period 1960 – 2017. Based on the minimum AIC value, the study presents the ARIMA (1, 1, 1) model as the optimal model. The forecast evaluation statistics, namely ME, RMSE, MAE, MPE, MAPE and Theil's U absolutely showed that the forecast accuracy of the model is quite good and that the Naira will continue to depreciate.

In the same vein, Mohammed and Abdulmuhaymin (2016) investigates the exchange strength of Nigerian naira with respect to United States dollar and fit an appropriate model to the data using Box Jenkins approach, the data spans the period 1972 to 2014. The result revealed that the exchange rate of naira to a U.S dollar has been relatively stable from 1972 to 1985, and then a continuous upward trend from 1985 to 2014. Based on the selection criteria AIC and SIC, the best model that explains the series was found to be ARIMA (0, 2, 1). A forecast for period of six years terms was made and the forecasted values were all within the confidence limits.

Also, Nwankwo (2018) applied ARIMA model to exchange rate (Naira to Dollar) within the periods 1982-2011 using Box-Jenkins methodology. The fitted model was an AR (1) based on its potentials for better prediction and computational requirements. Onasanya et al. (2014) fitted a seasonal ARIMA model of Naira/Dollar exchange rate using a monthly data for the period of Jan 1994 to July 2013. The estimated forecast values from their proposed model closely reflect the economic reality in two countries as indicated by the forecast measurement criteria

In the same vein, Olakorede et al. (2018) developed a univariate time series ARIMA model to the Monthly data of exchange rate between Nigerian Naira and US Dollar from January 1980 to December 2015. The resultant Box-Jenkins ARIMA model was ARIMA (0,1,1) based on Akaike Information Criteria (AIC) of 2313.19, Normalized Bayesian Information Criteria (BIC) of 2325.39. The fitted model was used to obtain the post-sample forecasts for three years (January 2016 to December 2018).

An observation from the empirical studies on Nigeria revealed greater part of the studies on forecasting Nigeria's exchange rate have ignored the seasonal behaviour of the series. This study hence complemented the few studies on SARIMA framework by using higher data points to build the model and employ it for in-sample and out of sample forecast.

Methodology

Data type and source

The study used Nigeria's monthly average official exchange rate of the naira (N/US\$1.00) from 1981:1 to 2018:12 leaving 2019:1-12 data for out-of-sample forecast. The series were sourced from the 2019 CBN Statistical Bulletin. The choice of Naira-Dollar was in consideration of the latter's role which the CBN (2019) described as the intervention currency in the market and that the exchange rates of other currencies are based on cross reference to the naira - dollar exchange rate. The choice of monthly data is informed by the fact that "a lengthy time series data is required for univariate time series forecasting. It is

recommended that at least 50 observations are to be made available (Meyler, Kenny & Quinn, 1998). With 468 data points, it is likely that the potential model will be passable for making forecast. The series were analysed using Stata version 15.

Model

The study used seasonal ARIMA model (SARIMA). It is an extension of autoregressive (AR) and moving average MA process in the popular Box-Jenkins methodology. SARIMA otherwise known as multiplicative seasonal ARIMA model is applied when time series exhibit a periodic seasonal component. It is denoted by ARIMA (p,d,q)(P,D,Q)_s.

Generically, the Autoregressive Moving Average (ARMA) model can be written with (p)Autoregressive (AR) terms and (q) Moving Average (MA) terms as:

$$y_t = \varepsilon_t + (a_1Y_{t=1} + a_2Y_{t=2} + \dots + a_pY_{t=p}) + (b_0\varepsilon_{t=1} + \dots + b_q\varepsilon_{t=q})\gamma y_{t-1} \dots \quad (1)$$

This can be rewritten as $\phi(Z)Y_t = \theta(Z)\varepsilon_t$

Where $\phi(Z) = 1 + a_1Z + \dots + a_pZ^p$ and $\theta(Z) = 1 + b_1Z + \dots + b_qZ^q$ are the characteristic polynomials of the AR part and of the MA part of an ARMA (p, q) process (Y_t). z is the back-shift (lag) operator.

ARIMA is an extension of ARMA models to include differencing. A process y_t is said to be an ARIMA (p, d, q) if (1 - z)^dY_t is a causal ARMA (p,q). The corresponding ARIMA equation is:

$$\phi(Z)(1 - z)^d X_t = \theta_q(Z)\varepsilon_t \quad \dots \dots \dots (2)$$

The SARIMA process for a non- stationary time series possibly containing seasonality is that with seasonal periodic component that repeats itself after every s observation. Box, Jenkins, Reinsel and Ljung (2016) defined the general multiplicative SARIMA model as:

$$\phi_p \Phi_P(Z^s)(1 - z)^d(1 - Z^s)^D Y_t = \theta_q(Z)\Theta_Q(Z^s)\varepsilon_t \quad \dots \dots \dots (3)$$

Where: $\phi_p(Z), \Phi_P(Z^s), \theta_q(Z),$ and $\Theta_Q(Z^s)$ are characteristic polynomials of orders p, P, q and Q respectively. d and D are the orders of non-seasonal and seasonal differencing respectively.

Estimation Techniques

To achieve the objective of the study, follows the B-J steps of identification, estimation, diagnostic checking and forecasting.

i. Identification

SARIMA model is appropriate for stationary time series therefore; the data under consideration must satisfy the condition of stationarity. The Augmented Dickey and Fuller (ADF) and the Phillips and Perron (PP) tests were performed to accomplish this. The ADF and PP tests are conducted from the ordinary least squares estimation of the following equations, respectively:

$$\Delta Y_t = \alpha + \beta T + \gamma y_{t-1} + \sum_{i=1}^n \alpha_i \Delta y_{t-i} + \varepsilon_t \dots \dots \dots (4)$$

$$\Delta Y_t = \alpha + \beta T + \gamma y_{t-1} + \varepsilon_t \dots \dots \dots (5)$$

where Y is the variable of interest (in this case the monthly exchange rate), α₀ is the intercept, T is a linear time trend, Δ is the first difference operator, and ε_t is the error term with zero mean and constant variance. The hypothesis (Ho: γ = 0) that Y is a nonstationary is rejected if the test fails to reject the alternative hypothesis (H₁: γ < 0). Since the t-statistic does not have the standard t distribution for both tests, MacKinnon (1991) finite sample critical values

are used to determine the statistical significances. The unit root test was followed up with the autocorrelation function (ACF) partial autocorrelation function and the (PACF) plots of the series in order to determine values for p , q and P , D , Q .

ii. Estimation

The parameters are estimated by the maximum likelihood estimation method. For the estimated models, we select the one with the minimum values of Akaike Information Criterion (AIC) Bayesian Information Criterion (BIC).

iii. Diagnostics

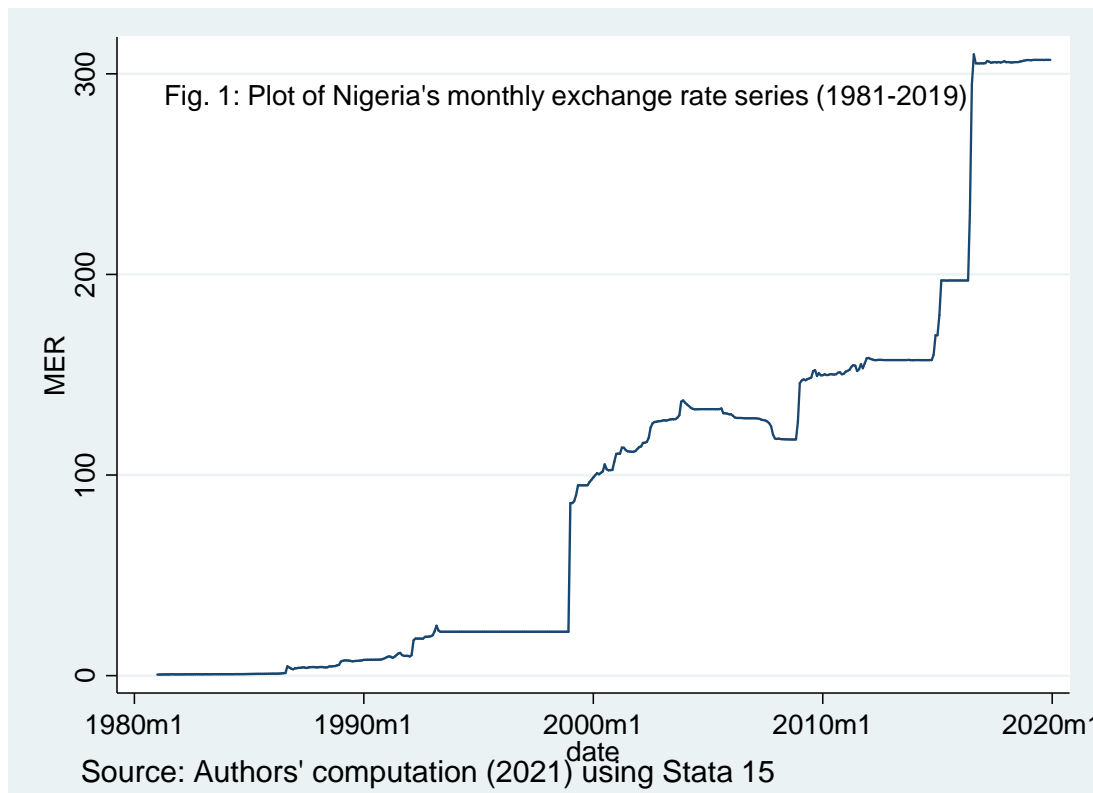
After estimating the parameters of the chosen model based on the information criteria, the last step is model diagnostics. This step is aimed at certifying the adequacy of the chosen model. The commonly used test is the examination of the ACF and PACF plots of the residuals to satisfy the assumption of SARIMA model that the the residuals of the model should be white noise. The ACF of the white noise residuals is approximately zero. Other tests such as the Ljung – Box Q statistic and ARCH - LM test compliment the residual diagnostics.

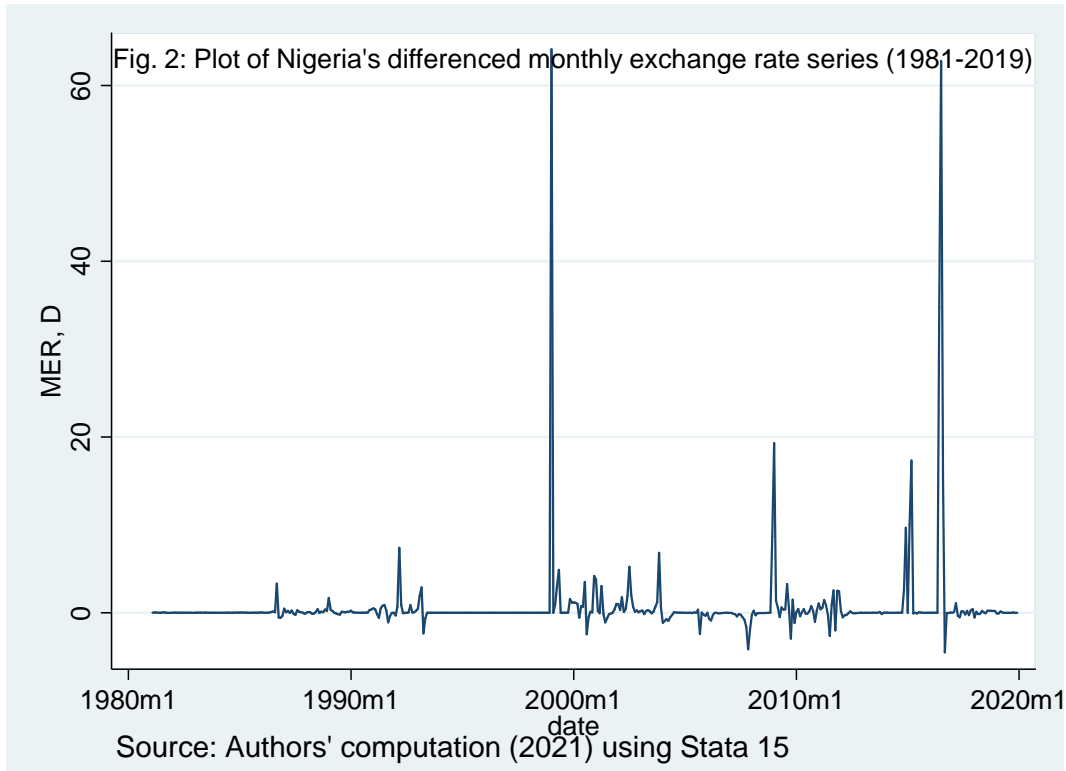
iv. Forecasting

In this stage we test the forecasting ability of the chosen model. In the case, the study used the in-sample forecast.

Results and Discussion of Findings

The data used for the study is depicted graphically for visual exploration. Figure 1 and 2 shows the respective plot of the original and differenced exchange rate data.





Both plots denote the pattern of nonstationary series. A series is said to be nonstationary, if it has a non-constant mean, variance and autocovariance over time. If a nonstationary series has to be differenced d times to become stationary, then it is said to be integrated of order d : i.e. $I(d)$. However, visual observation of the plots will not be enough to establish definite evidence of the presence of a unit root or otherwise. Thus, standard ADF and PP unit root tests were conducted on the series. Table 1 reports the results of the tests at level and first difference.

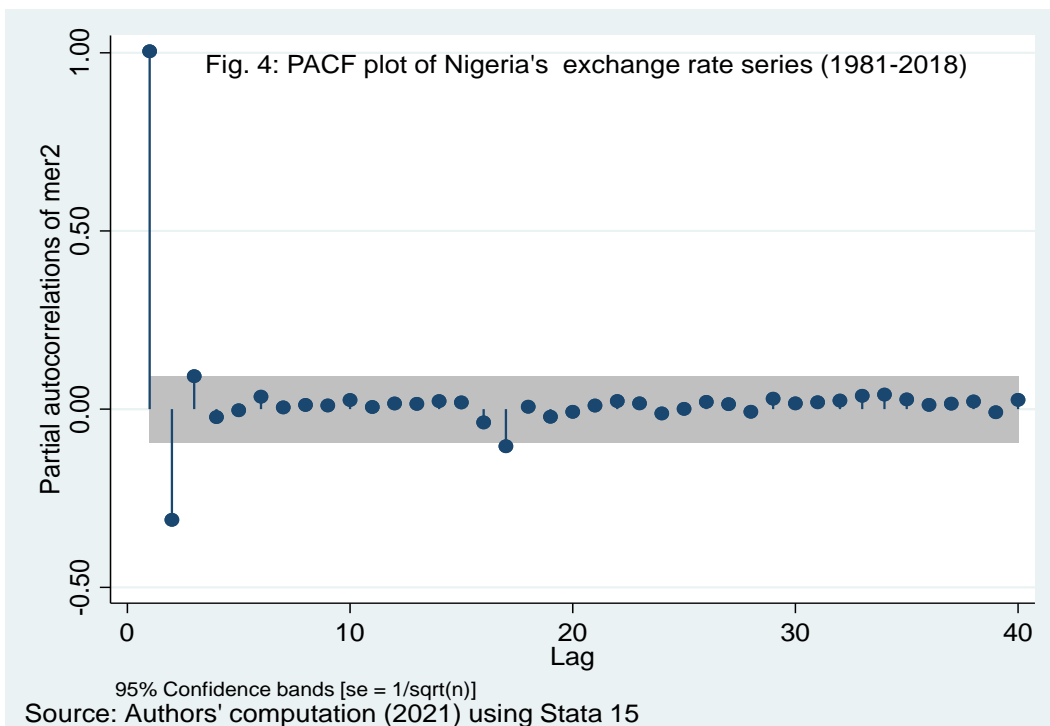
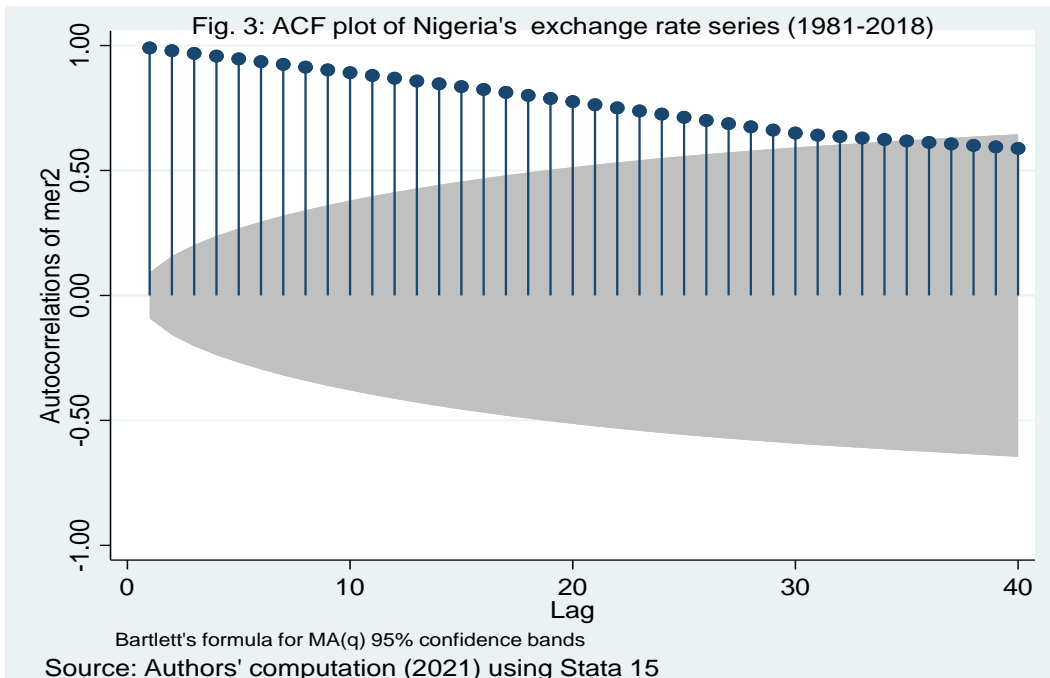
Table 1: Unit root test result

Variable	ADF	PP
MER (at level)	1.367	1.205
MER (at first diff.)	15.537***	15.374***

Source: Computed using Stata15. *** indicates significance at 1 percent, 5 percent and 10 percent level.

The results on Table 1 indicates that the null hypothesis of unit root in exchange rate series at level series cannot be rejected based on the ADF and PP statistics and their respective probability values. Running the two tests on the differenced data, we can now conclude that it is stationary at a 1% significance level. The result shows that the series are $I(1)$. The plot of the differenced data is depicted in Fig. 2 .

The next step is to determine the order of the AR and MA for seasonal and non - seasonal components using the sample ACF and PACF plots of the series.



A visual observation of the ACF shows that a reasonably number of lags beyond the Bartlett 95% confidence region. On the other hand, the PAC plot shows a first significant lag and subsequently noticeable significant lags appear to be seasonal (multiple of 12 or roughly 12) indicating a very strong seasonal AR term (seasonal AR term of a unit order). Thus, we started from the rudimentary model in order to identify and select the parsimonious one. Three SARIMA models were estimated. This is done to “slim the likelihood of missing out on a good fitting model observing the correlograms alone” (Adongoa, Lewis, Essieku, Boamah, & Chikelu, 2018:5). The fitting model is SARIMA (0,1,1) x (1,1,1) 12 after comparing the Akaike (1974) Information Criterion (AIC) and the Schwarz (1978) Bayesian

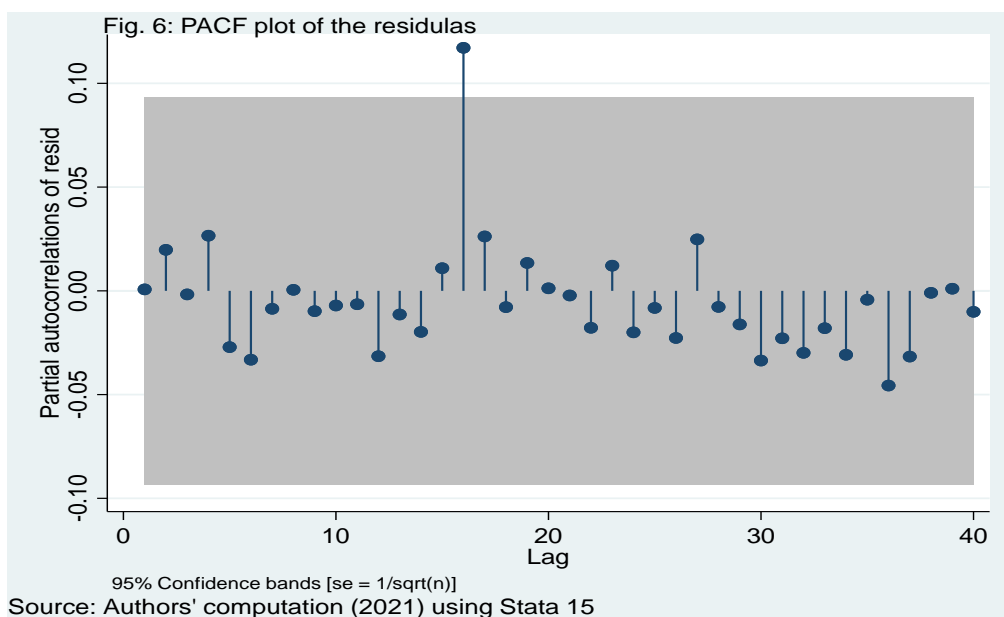
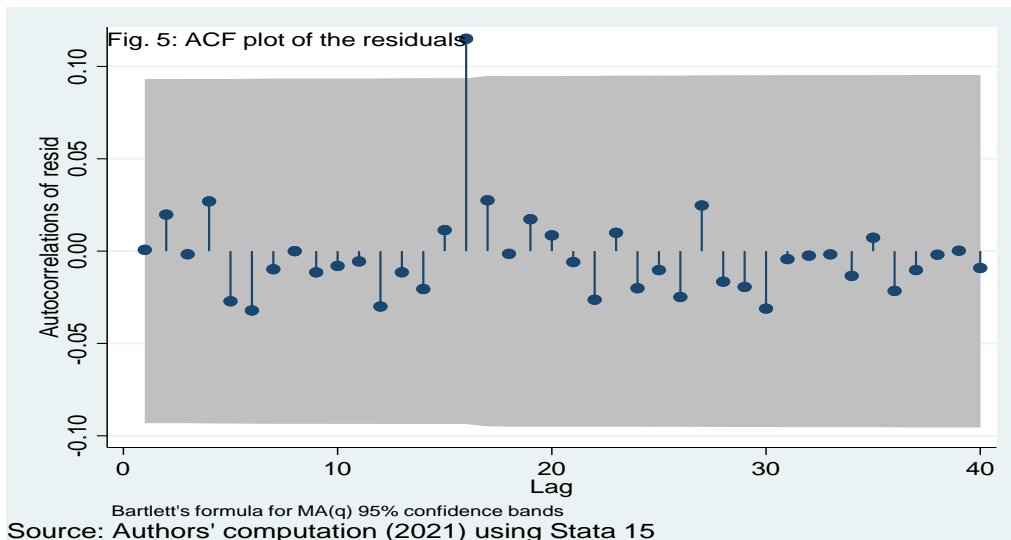
Information Criterion (SBIC) for each of the estimated models. Table 2 contains the summary of the models along with their AICs, BICs and Ljung-Box (LB) statistics.

Table 2: Summary of models estimation

<i>Model</i>	<i>AIC (df)</i>	<i>BIC (df)</i>	<i>LB Stat.</i>	<i>Prob.</i>
SARIMA (0,0,0) x (0,0,1) ₁₂	5194.083 (2)	5202.328 (2)	10200.2642	0.000
SARIMA(0,0,0) x (0,1,1) ₁₂	4028.548 (2)	4036.78 (2)	1058.953	0.000
SARIMA (0,0,0) x (1,1,1) ₁₂	4009.912 (3)	4022.199 (3)	1077.608	0.000
SARIMA (0,0,1) x (1,1,1) ₁₂	3512.042 (4)	3528.425 (4)	10965.0671	0.000
SARIMA (0,1,1) x (1,1,1) ₁₂	2655.824 (4)	2672.199 (4)	11148.3608	0.000
SARIMA (1,1,1) x (1,1,1) ₁₂	2657.531 (5)	2677.199 (5)	11328.5088	0.000

Source: Authors (2021)

Following the estimation, the standard diagnostic check in the B-J methodology is the examination of the residuals. Fig. 4 and 5 depicts the ACF and PACF plots of the residuals.



Close examination of the ACF and PACF plots of the residuals shows that they have zero mean, constant variance and also uncorrelated (white noise process) thus, signifying the fitness of the model. This is in addition to the probability values of 0.000 for the Ljung-Box statistic as depicted in Table 2.

Having determined and substantiated the SARIMA (0,1,1) x (1,1,1)₁₂ model for Nigeria, we now turn to its use in predicting the country’s exchange rate. Table 3 and 4 reports an in-sample and out of sample forecasts using the estimated model. The results are modest comparison of the actual and predicted exchange rate values for the selected periods. The results in table 3 evidently show a paltry oscillating variance between the actual and the predicted values for the period 2018M1 to 2018M12 the highest being +N3 and the lowest - 10 Kobo and averaging less than 50 kobo. Throughout the year, there wasn’t up to a percent difference between the actual and the predicted exchange rate values. Hence, this indicates that the chosen model can favorably forecast the actual values along with its seasonal variation.

Table 3: In-sample forecast

Date	Actual	Predicted	Difference	Percentage Change
2018m1	305.777	308.7991	3.0221	0.988335
2018m2	305.895	305.182	-0.713	-0.23309
2018m3	305.743	306.9767	1.2337	0.403509
2018m4	305.61	305.3985	-0.2115	-0.06921
2018m5	305.826	305.8619	0.0359	0.011739
2018m6	305.871	306.8214	0.9504	0.310719
2018m7	305.814	307.4394	1.6254	0.5315
2018m8	306.057	305.7921	-0.2649	-0.08655
2018m9	306.272	306.1571	-0.1149	-0.03752
2018m10	306.505	306.1594	-0.3456	-0.11276
2018m11	306.712	306.9139	0.2019	0.065827
2018m12	306.921	307.3392	0.4182	0.136257

Source: Authors (2021) using Stata 15

The results of out of sample forecasted as reported in Table 4 show a relatively wider difference between the actual and the predicted Naira-Dollar exchange rate values for January – December 2019. Accordingly, the estimated model has a better in-sample forecasting ability

Table 4: Out of sample forecast

Date	Actual	Predicted	Difference	Percentage Change
2019m1	306.845	309.8515	3.0065	0.979811
2019m2	306.768	310.2758	3.5078	1.14347
2019m3	306.924	311.0989	4.1749	1.360239
2019m4	306.962	311.1673	4.2053	1.369974
2019m5	306.95	311.3422	4.3922	1.430917
2019m6	306.947	312.3253	5.3783	1.752192
2019m7	306.937	314.1674	7.2304	2.355663
2019m8	306.932	314.6873	7.7553	2.526716
2019m9	306.919	314.7026	7.7836	2.536044
2019m10	306.964	314.5563	7.5923	2.473352
2019m11	306.948	314.8459	7.8979	2.573042
2019m12	306.95	315.5383	8.5883	2.797948

Source: Authors (2021) using Stata 15

Based on the sampled data the model has adequately predicted (in-sample) the exchange rate series for the period in question.

Conclusion and Recommendations

The study has developed the model of Nigeria's Naira-Dollar exchange rate with higher data points and taking into cognizance its periodic seasonal component. From among the competing models, SARIMA (0,1,1) x (1,1,1)₁₂ was adjudged the best in explaining the country's exchange rate series from January 1981 to December 2018 based on its AIC and BIC values. The estimated model is found to be adequate in making forecast using a sample data for 2019. Having predicted the worsening value of Naira along seasonal path, the study thus recommends that authorities should consider the seasonal component in designing monetary policies targeted at foreign exchange to stabilize the economy.

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Determinants of financial development: An application of ARDL model



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Abstract: *The determinants of financial development in an underdeveloped financial system like Nigeria remained ambiguous. This study analyzes the potential impact of institutions and selected macroeconomic variables on financial development. The ARDL model was employed and the results indicate that interest rate and control of corruption are the main determinants of financial development in the long-run. Thus, monetary authorities should ensure a positive interest rate through sound monetary policy framework, since bank-based financial systems engender financial development. Also, anti-corruption agencies need to be strengthened, and regulatory quality improved upon.*

Keywords: ARDL, Financial development, Institutions, Private Sector Credit, Nigeria.
JEL Classification: O09, O11

Introduction

The role of finance in promoting economic growth is documented in the literature but debate on the determinants of financial development remained contentious particularly in developing economies, Nigeria inclusive. Earlier studies by McKinnon (1973) and Shaw (1973) indicate that a positive real interest rate promotes financial development through increased volume of financial saving mobilization while a high interest rate discourage investors from investing in low return projects (Fry, 1997). In addition, Shaw (1973) asserts that financial development is a positive function of real income and real interest rates. King and Levine (1993) argued along this line. Similarly, Aregbeshola (2019) argued that institutional adequacy has impact on financial development in Africa, of which the role of efficient macroeconomic management is critical. Also, Law and Habibullah (2009) view institutions, real income per capita and financial liberalization determines financial development. In contrast, DeGennaro (2015) identified taxes, high transaction costs, and institutional weakness in influencing financial development. Also, Chinn and Ito (2002, 2005) argued that capital control and capital account liberalization determines financial development especially when there is development in legal systems and institutions. Similarly, Levine (2002) argued that it is the overall economic growth that determines financial development. Furthermore, the bank-based view articulated that banks contribute to overall financial development (Levine, 2002), while the law and finance view argued that the overall financial development is a positive function of the legal system.

However, various studies focused on developed economies (Chinn and Ito, 2002, 2005; DeGennaro, 2015; King and Levine, 1993; Law and Habibullah, 2009; Levine, 2002; McKinnon, 1973; Shaw, 1973;) while others investigate the institution-capital market performance analysis in developing economies (Aregbeshola, 2019). In addition, documented studies that investigate regional dynamics especially in Africa, and Nigeria in particular are rare. This implies that not much is known about the impact of institutions and selected macroeconomic variables on financial development in Nigeria. Given the gaps above, it is imperative to analyze the potential impact of institutions and macroeconomic variables on financial development in Nigeria. As such, an interesting question remains: why have some countries developed well-functioning financial systems and institutions while others have not? Thus, the objective of this study is to examine the determinants of financial development based on theoretical postulates. This study is unique in the following ways:

First, the study provides a direct test of the determinants of financial development using appropriately specified financial development equations, which investigate the relative importance of these determinants in promoting financial development. Second, various documented studies have used series of variables such as rule of law, corruption perception index, regulatory efficiency, civil liberties, veto power, quality of government, trade openness and financial liberalization in investigating similar relationship (Aregbeshola, 2019; Law & Habibullah, 2009; McKinnon, 1973; Shaw, 1973; Valeriani and Peluso, 2011). The drawback of these studies is that they excluded macroeconomic variables in their studies, except Aregbeshola (2019) who made an attempt. This study fills these academic lacunae.

The remainder of this study is structured as follows: section 2 is literature review and theoretical framework while section 3 explains the methodology adopted in this study. This is followed by results and discussions in section 4. Section 5 is conclusion and recommendations.

Literature Review and Theoretical framework

Several empirical studies were carried out on the determinants of financial development, and hence, economic growth. In advanced economies, substantial evidences were established. For instance, Law and Habibullah (2009) provides new evidence on the influence of institutions, trade openness and financial liberalization on financial development, using data from 27 economies (G-7, Europe, East Asia and Latin America). The study employed the Generalized Methods of Moment (GMM) and Pooled Mean Group (PMG). The dynamic panel data analysis results demonstrate that real income per capita and institutions are statistically significant determinants of banking sector development and capital market development while trade openness promote capital market development and financial liberalization promote banking sector development. Also, Chinn and Ito (2002) findings in their study show that there is a strong relationship between capital control and financial development. Their findings hold for less developed countries in terms of stock market value traded, and emerging market economies. Similarly, Chinn and Ito (2005) found that capital account liberalization contributes to stock market development in 108 countries, but only when the threshold level of general development of legal systems and institutions have been attained.

Furthermore, Levine (2002) empirically assess the influence of financial structure on economic growth. The results indicate the view that although the overall financial development is robustly linked with economic growth, there is no support for either bank-based or market-based view. In a similar study, Wong and Zhou (2011) used cross countries data pooling across advanced economies and found that stock market development is a key driver for economic growth. In African context, Aregbeshola (2019) carried out a study on the impact of institutional framework on capital market behaviour of selected African countries by employing the GMM technique of analysis. Findings from the study established

the role of institutional adequacy in the development of capital markets in Africa. Also, the study found the role of efficient macroeconomic management to be important to capital market efficiency in Africa. Similarly, Ndlovu (2013) examined financial sector development and economic growth in Zimbabwe. The study found that economic growth led to demand for financial services.

In Nigerian context, Adedokun (2010) used Credit to the Private Sector (CPS), interest rate, and trade openness in examining the relationship between financial development and economic growth. The results show that CPS, interest rate and trade openness are growth enhancing. Similarly, Agu and Chukwu (2008) employed multivariate Johansen Juselius framework and Toda-Yamamoto causality tests. The study used per capita income, CPS, ratio of broad money to GDP, ratio of bank deposit liabilities to GDP, and the loan deposit ratio. The results suggest that the variables are positively cointegrated with economic growth. Also, Okafor et al (2016) employed Granger causality test to investigate the impact of financial development on economic growth in Nigeria. The Granger causality test results show that neither broad money supply nor CPS Granger causal to economic growth and vice versa. Other studies have examined the impact of institutions on the growth process of several countries (see Acemoglu and Robinson, 2008; Alonso and Garcimartin, 2010; Kaufman et al., 2009; Valeriani and Peluso, 2011; Zhuang et al., 2010). The authors found institutions to be significant and positively correlated with economic growth.

From the forgoing, most of the studies focused on developed economies while few others focused on the influence of financial development on economic growth. Thus, studies on the determinants of financial development are rare, particularly in the Nigerian context. In view of this, the present study added to the body of literature on the determinants of financial development in Nigeria.

Theoretical framework

This study is anchored on endogenous growth literature which predicts a positive relationship among financial development, real income and the real interest rate (King and Levine, 1993; McKinnon, 1973; Shaw, 1973;). Based on this theoretical postulate, a financial development relationship can be specified as:

$$FD = f(RGDPC, INR) \quad (1)$$

Where FD is financial development, RGDP is real GDP per capita and INR is real interest rate. Also, Rajan and Zingales (1998) argued that bank-based systems have a comparative advantage in economies with weak legal systems and will benefit from becoming more market-based only as their legal system improves. In this case, equation (1) is modified and extended to include institutional quality index, and exchange rate as follows:

$$FD = f(CC, RQ, INR, EXR) \quad (2)$$

Where; *FD* is financial development as proxy for Credit to the Private Sector (CPS), *CC* is control of corruption index, *RQ* is regulatory quality, *INR* is interest rate and *EXR* is exchange rate.

Statistically,

$$LFD_t = \beta_0 + \beta_1 LCC_t + \beta_2 LRQ_t + \beta_3 LINR_t + \beta_4 LEXR_t + U_t \quad (3)$$

Where the parameters, $\beta_i= 1, 2, \dots, 4$ are coefficients of the explanatory variables, U_t stands for stochastic disturbance term. Thus, the econometric model employed in this study is as follows:

$$LCPS_t = \beta_0 + \beta_1 LCC_t + \beta_2 LRQ_t + \beta_3 LINR_t + \beta_4 LEXR_t + U_t \quad (4)$$

Methodology

To achieve the objective of the study, the data collected was analyzed using the ARDL model. The model by Pesaran, et al. (2001) was used for testing the existence of cointegration and in evaluating both the short-run and long-run relationship simultaneously, when there is mixture of relationships; I(0) and I(1).

Unit Root Test

The Augmented Dickey-Fuller (1979) and Phillip-Perron (1989) were used to determine the order of integration of the series. In order to avoid estimating spurious regression, the stochastic properties of the series were tested. Therefore, ADF test is given as:

$$\Delta y_t = \alpha + \gamma y_{t-1} + \sum_1^n a_1 \Delta y_{t-1} + \varepsilon_t \tag{5}$$

In equation (5), lagged first difference terms of the dependent variable is added in order to assure no autocorrelation contained in the residuals.

Sources of Data

Time series data on institutional quality index was sourced from World Governance Indicators (WGI), while data on interest rate, and exchange rate were sourced from the Central Bank of Nigeria (CBN). The study covers the period from 1996 to 2018.

Results and Discussion

The results of the unit root test depicted in tables 1 and 2, show that the series are integrated at I(0) and I(1). This confirmed the relevance and justification for the use of the ARDL cointegration approach.

Table 1: Augmented Dickey Fuller Unit Root Test

Series	Intercept without trend		Intercept with trend	
	Level	1 st Difference	Level	1 st Difference
CC	-3.279894**	-5.490461***	-3.169341	-5.334327***
CPS	-0.826769	-3.906593***	-2.717232	-3.783727**
EXR	-5.331899***	-4.359182***	-5.043710***	-4.213945**
INR	-3.880698***	-0.137755	-0.422613	-2.569215
RQ	-2.404243	-5.673758***	-2.873118	-5.513998***

Note: *** and ** represent significance level at 1% and 5% respectively. The figures are the *t*-statistics for testing the null hypothesis that the series has unit root. The lag length is determined and fixed at 2 based on Schwarz (1987).

Source: *Researcher's Computation.*

Table 2: Phillip-Perron Unit Root Test

Series	Intercept without trend		Intercept with trend	
	Level	1 st Difference	Level	1 st Difference
CC	-2.388071	-5.378326***	-2.389539	-5.241983***
CPS	-0.867641	-3.431554**	-2.070037	-3.301751*
EXR	-5.331899***	-17.35360***	-5.043710***	-17.37559***
INR	-2.002418	-2.220088	1.177253	-3.603125*
RQ	-2.414965	-5.737283***	-2.913094	-5.575873***

Note: ***, ** and * represent significance level at 1%, 5% and 10% respectively. The figures are the t-statistics for testing the null hypothesis that the series has unit root. The lag length is determined and fixed at 2 based on Schwarz (1987).

Source: Researcher's Computation

The ARDL bounds test in Table 3 below indicates cointegration among variables of interest. Thus, the null hypothesis of no long-run relationships is rejected.

Table 3: Bound Cointegration Test

Model	F-Stat.	Sig. Level.	Critical Value	
			I(0)	I(1)
CPS=f(CC, EXR, INR, RQ)	5.380476***	1%	3.79	5.06
CC=f(CPS, EXR, INR, RQ)	1.679958*	10%	2.45	3.52
EXR=f(CPS, CC, INR, RQ)	3.451742*	10%	2.45	3.52
INR=f(CPS, CC, EXR, RQ)	5.314204***	1%	3.74	5.06
RQ=f(CPS, CC, EXR, INR)	2.52162		2.45	3.52

Note: *** and * represent 1% and 10% significance level. The critical values are based on Narayan (2005), case III for T = 35 due to small sample size of the study.

Source: Researcher's Computation

From table 4, the results indicate that a positive interest rate determines financial development at 5% level of significance. The finding in this study is consistent with the findings in studies by King and Levine (1993); McKinnon (1973); Shaw (1973), that financial development is a positive function of interest rate, and promotes financial development through increased volume of financial saving mobilization. Also, Levine (2002) concluded that bank-based financial systems contribute to overall financial development. However, the result is inconsistent with the findings in a study by DeGennaro (2015) who argued that taxes, high transaction costs, and institutional weakness are the determinants of financial development. Similarly, the findings in this study is consistent with the findings of Aregbeshola (2019) that efficient macroeconomic management is critical to financial development in Africa. Further, Law and Habibullah (2009) concluded in their study that institutions are statically significant determinants of banking sector development. In the context of corruption, the findings in this study show that financial development is a positive function of control of corruption (institutional quality), hence economic growth. This corroborate the law and finance view who assert that financial development is a positive function of institutional quality. On the other hand, both exchange rate and regulatory quality are statistically not significant determinants of financial development. This may not be unconnected to the fact that following financial sector reform, the financial markets became more unstable and the financial institutions more fragile because of unfamiliar practices, excessive risk-taking and weaknesses in the regulatory and supervisory framework. Further, the short-run dynamics indicate that all the variables are statistically not significant.

However, the speed of adjustment shows that disequilibrium in the short-run adjusted in the long-run at an adjustment speed of approximately 62%.

Table 4: Long Run and Short Run Coefficients

Variables	Long Run Coefficients	Short Run Coefficients	
CC	13.598299** (0.0789)	CC	1.67238 (0.7061)
EXR	-0.200169 (0.3586)	EXR	0.084993 (0.1697)
INR	19.735336*** (0.0001)	INR	-26.831225 (0.3383)
RQ	0.563079 (0.8902)	RQ	0.350654 (0.8918)
CONSTANT	-9.476958 (0.3093)	CointEq(-1)	-0.622744*** (0.0043)
Diagnostic Test	LM	JB	HET
Chi-Square	0.1435	1.843654	0.9334
P-value	0.025	0.397792	0.8556

Source: Researcher's Computation

Note: ***and ** denote statistical significance at the 1% and 5% levels, respectively. The figures in parentheses are the T-statistics. Serial correlation is examine using Lagrange Multiplier test of residual (LM), normality base on skewness and kurtosis (JB) while Heteroscedasticity is based on squared residuals on squared fitted values (HET).

Furthermore, diagnostic test shows robust results. For instance, Breusch-Pagan-Godfrey test show that there is no problem of heteroskedasticity. Also, Jarque-Bera test indicated that the data are normally distributed. Further, CUSUM and CUSUM of square test show that the data were stable during the period under study.

Figure 1: Normality Test

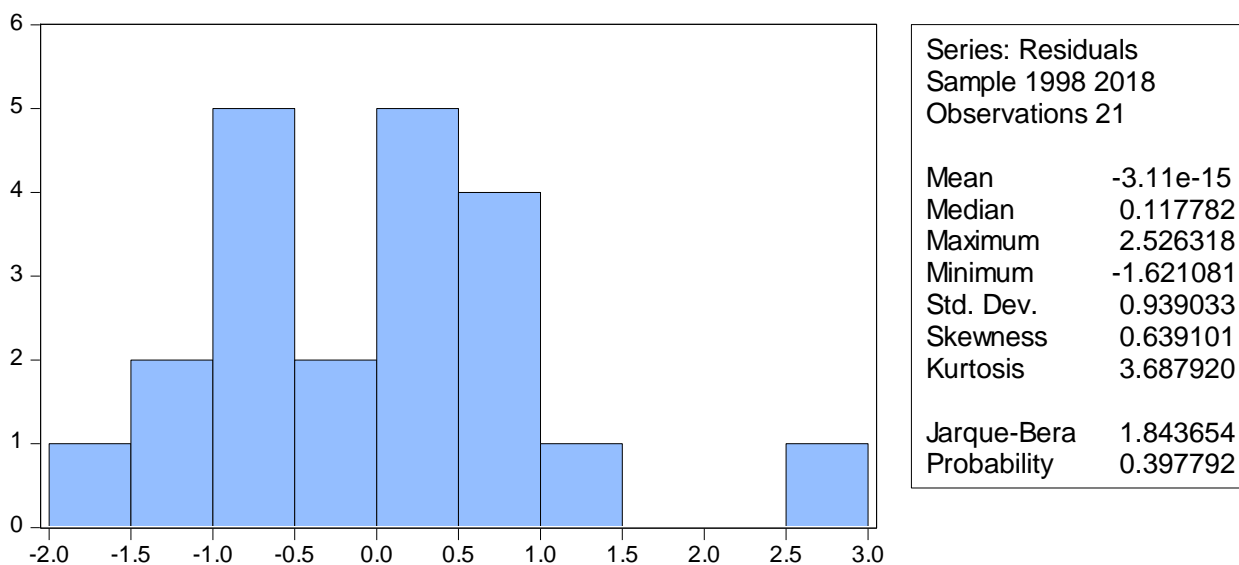


Figure 2: CUSUM Test

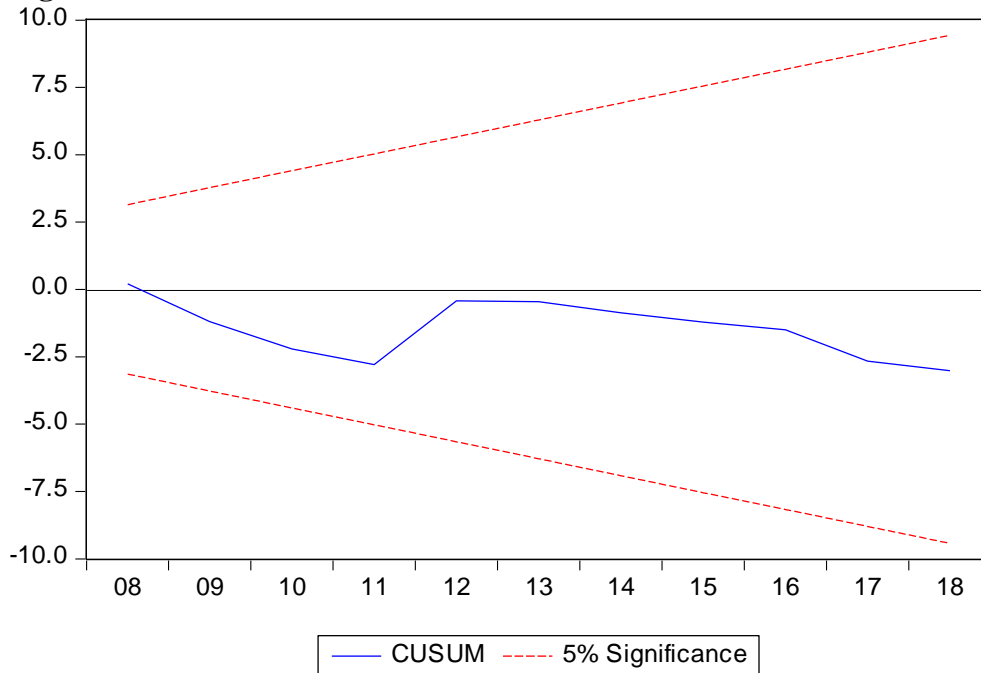
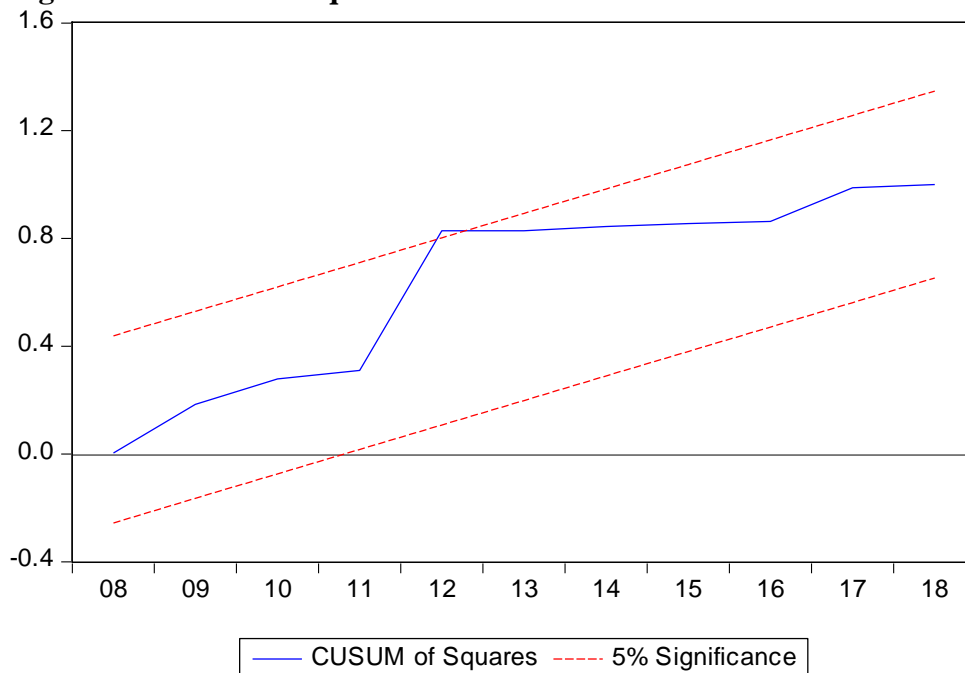


Figure 3: CUSUM of Square Test



Conclusion and Recommendations

This study provides a direct test of the determinants of financial development by investigating the impact of institutions and selected macroeconomic variables in promoting financial development. The ARDL model was employed. The conclusion drawn in this study indicate that interest rate and control of corruption are the major determinants of financial development in the long-run. The policy implication of the study is that a positive interest

rate engenders financial development, and that corruption hinders financial development, hence economic growth. Thus, policy-makers must, as a matter of policy ensure a positive interest rate through sound monetary policy framework. Also, anti-corruption agencies need to be strengthened, and regulatory quality should be improved upon.

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Export Growth and Poverty Reduction in Nigeria



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Abstract: Nigeria like many other developing economies views export growth as the main engine of its poverty reduction goal, because of the strong notion that export trade would stimulate export promotion to curb unemployment and poverty. This study examines export growth and poverty reduction in Nigeria (1990 - 2019). Time series secondary data on Poverty Rate, Total Export, Export Development Fund, Export Expansion Grant Fund and Export Credit and Guarantee Insurance Fund were sourced from World Development Indicator (WDI, 2019) while Vector Error Correction Model (VECM) and Johansen Co-integration test were used for testing the hypothesis of the study. The findings from the VECM analysis revealed that increase in total export led to increase in poverty reduction in Nigeria within the study period. Hence, this implies that export growth led to a decrease in poverty in Nigeria as evidenced from the empirical result where poverty as the dependent variable was inversely related to all other independent variables (i.e. Total export, Export development fund, Export expansion grant fund and Export credit and guarantee insurance fund) in the model. This finding thus, proves that government's policy and attempt at introducing export development fund, export expansion grant fund and the export credit and guarantee insurance scheme fund have over the years yielded positive impacts on the export sector, and in-turn led to poverty reduction in the economy.

Keywords: Export, Export Growth, Poverty Reduction, VECM, Nigeria

Introduction

There is no disputing in the fact that export trade is an important stimulus for poverty reduction. This is evident in the fact that most countries in the past five decades have managed to sustain high levels of economic growth and reasonable appreciations in income per capita via export expansions (Akanni, 2017). Indeed, as illustrated in a study from the World Bank (2019), the fastest growing countries in terms of poverty reduction are those that have expanded their shares of global exports in finished and semi-finished goods and products. Consequently, one of the most direct ways in which export growth could impact on poverty reduction in Nigeria is via the impact it has on wages, employment and profits from exportation. This is buttressed by the traditional trade theory which posits that export growth would especially benefit the poor in developing economies. In this regard, Nigeria like many other developing economies views export growth as the main engine of its poverty reduction goal, because of the strong notion that export trade would stimulate export promotion to curb unemployment, expand markets, raise wages and salaries, enhance international competition and disperse international trade awareness. Thus, achieving poverty reduction via export growth may come from enhancing competitiveness of domestic industries, stimulating local value-added and promoting a diversified export base that will bring the optimal level of economic development in the Nigerian economy.

In order to promote export growth to attain desired level of poverty reduction, import trade policies were accordingly directed at discouraging dumping; supporting import substitution; stemming adverse movements in the balance of payments; conserving foreign exchange; and generating government revenue so as to enhance economic development and reduce poverty to the barest minimum level (Bankole & Bankole, 2014). All these were serious concerted efforts and attempts to encourage and stimulate export trade and export growth so as to create the resources to raise incomes that may be sufficient enough to bring the benefits of foreign exchange earnings to the populace and the government. This goes to prove that in the absence of exports and earnings from export, the growth of an economy will be constrained by domestic demand that may be detrimental to achieving the desired level of poverty reduction. This will no doubt be the case for a developing economy like Nigeria where domestic markets are small, while foreign markets provide demand for production levels that are not sustained by the domestic economy. Hence, access to other foreign markets permits domestic producers to gain from economies of scale and increased productivity that may be required for stimulating export growth, and in turn ameliorating the high level of poverty in the economy.

In order to address the issue of export growth and export enhancement for foreign exchange earnings to ameliorate poverty, the Nigerian government over the years introduced incentive schemes for export promotion which comprises; the Export Development Fund (EDF), the Export Expansion Grant Fund (EEG); the Export Credit and Guarantee Insurance Scheme fund, the Duty Drawback Scheme; the Investment Tax Credit Scheme; the Manufacture-in-Bond Scheme; buy back schemes, pioneer Status, tax relief on interest income, rediscounting short-term bills, retention of export proceeds, the Free Trade Zones, and the Export Processing Factories (EPF) to attract foreign direct investment, and to improve production for export to increase the country's GDP per capita towards achieving poverty reduction (Yusuf et al, 2013). However, despite the introduction of the above numerous incentives schemes to enhance export growth, the problem of weak export base, stunted export growth and epileptic export trade still persists in the Nigerian environment as a whole. In summary, the Nigerian export sector still remains shallow, ill-equipped, and underdeveloped. This is the major problem that necessitates this study and whether this stunted and underdeveloped sector have succeeded in reducing poverty in the economy remains the central focus or objective of this study.

This study is divided into four different sections. The first section is the introduction. The second section is the literature review, while the third section takes care of the methodology. The fourth and final section is the conclusion and the recommendations of the study

Literature Review

Export is a function of international trade whereby goods produced in one country are shipped to another country for future sale or trade. An export in international trade is a good or service produced in one country that is bought by someone in another country (Adenugba, 2013). The seller of such goods and services is an exporter; the foreign buyer is an importer. Export of goods often requires involvement of customs authorities. An export's reverse counterpart is an import.

Export growth refers to the total increase in the production of export goods with maximum control up to the international standard (Singer & Gray, 1988). Export growth generally focuses on specifications in export promotion in terms of international trade. Export growth is

aimed at facilitating export promotion activities in a country in order to increase the export earnings of the country (Yanikaya, 2003).

Poverty refers to “a lack of command over basic consumption needs” (Aremu, 2004). According to Singer and Gray (1988), poverty is not only income deprivation, but also capacity deprivation. This refers to material needs such as food, shelter, clothing, health, education and participation in all economic activities. This however may also refer to intangible or socio-cultural items that border on issues of fundamental human rights. This includes freedom of speech, freedom of religion, etc. The father of modern economics, Adam Smith defined poverty as “the inability to purchase necessities required by nature or custom” (Singer and Gray, 1988). In this definition, the social/psychological status aspect of poverty (custom) receives implicitly the same weight as the material, purely economic condition (nature). According to World Bank (2011), “poverty is the economic condition in which people lack sufficient income to obtain certain minimal levels of health services, food, housing, clothing and education which are necessities for standard of living”.

Poverty reduction is a set of measures, both economic and humanitarian, that are intended to lift people out of poverty (Aremu, 2004). It also means all formal activities geared towards lowering the rate and prevalence of poverty in a country. Poverty reduction has to do with any effort towards reducing the level of poverty. According to Nnamani (2003) poverty reduction connotes a concerted effort made to uplift or reduce the poverty level or situation of citizens of a particular sector. It could be national, state, local, community and or a family affair.

The theoretical foundation or anchor for this study is the Heckscher-Ohlin Theory. The Heckscher-Ohlin theory posits that exports through international trade is expected to constitute the major component that will significantly reduce the gap between the rich and poor countries. Hence, the reduction of the gap between the rich and poor is an evidence of economic development. The theory also contends that inter-country differences in factor endowments are the basis for foreign trade. Hence, the need for foreign trade necessitates export growth to achieve the desired level of poverty reduction. Another tenet of the theory is that free trade specialization in production based on relative factor endowments will tend to bring about factor price equalization and thus will increase the returns to labour in poor countries to the levels in rich countries. This suggests that international trade in general and exports in particular have the ability to mitigate inequality in income and wealth distribution between and within nations as well as the ability to bring about a convergence in absolute poverty incidence between the rich and poor countries towards enhancing economic development (Ozughalu and Ajayi, 2004).

Empirical Literature

Oyedele and Uduakobong (2013), researched into Export Growth and Poverty Reduction in Nigeria for the period 1980 to 2010. Using the Ordinary Least Squares (OLS), after correcting for stationarity and heteroskedasticity biases, their results revealed that the growth rate of total export value or earnings is positively significant to explain changes in the real gross domestic product per capita used as a proxy for poverty. Thus, an increase in the total export value increases the real gross domestic product per capita and thus reduces poverty. The total export volume however is not significant. Separating the total export volume into oil and nonoil exports, nonoil export growth was found to have a positive effect on the real gross domestic product per capita while the effect of oil export growth is negative. However, both were insignificant. The study concludes that a diversification of Nigeria’s export from

the predominantly oil exports to incorporate nonoil exports that have a higher export value going by the world market price is necessary for poverty reduction.

Yusuf, Malarvhizi and Khin (2013), examined the causal relationships between trade liberalization, growth of the Nigerian economy and poverty. The study applied time series data for Nigeria and employed the ARDL approach. Evidence from the study suggests that trade liberalization does not cause poverty reduction, implying that the benefit of trade liberalization does not trickle down to the poor in Nigeria. This suggests that Nigeria as a country with high propensity to import and poor commodity prices need not to strictly follow the one size fit all trade liberalization policies, rather each country need to focus on trade policies peculiar to its own environment, which can deliver growth and translate growth into a meaningful poverty reduction.

Otame (2016), in his study ‘‘does earnings from exports reduce or aggravate poverty and unemployment in Nigeria?’’ examined the impact of export earnings and exchange rate on the macroeconomic variables of poverty and unemployment using the statistical tool of co-integration in a modified Ordinary Least Square (OLS) framework. The regression results showed that about 39% variation in unemployment level and 38% of the total change in poverty rate are explained or attributable to export earnings (oil and non-oil), inflation rate, exchange rate and the country’s degree of openness. Specifically and as expected, oil exports made positive contribution to both poverty and unemployment reduction while non-oil exports, exchange rate and the country’s degree of openness (against expectations) seem to aggravate unemployment and poverty.

Nwafor, Ogujuiba and Adenikiju (2005) examined the effects trade liberalization will have on Poverty in Nigeria. The study employed the Dynamic Computable General Equilibrium Model method of analysis. The findings from the study revealed that trade liberalization led to a decrease in urban poverty (both in the short and long run), while rural poverty increased in both periods. They argued that the reason for the discrepancy in the poverty situation in urban and rural area is that the latter depends solely on agriculture for survival, and for trade liberalization policies to be effective; it must work with improvement in agricultural policies either before trade liberalization or concurrently with trade liberalization

Ayinde (2013), in the study; Trade Liberalization, Growth and Poverty Reduction In Nigeria traces the beneficial effects of trade-growth nexus and evaluates its indirect trend on the poverty periscope of the Nigerian economy (i.e the trickle-down theory of development), and in order to keep up with the ‘stationarity’ of the time-series economic data employed, the Augmented Dickney Fuller (ADF), the Phillip Peron (PP) test, and the Johansen Juselius Cointegration tests were respectively employed. Contrary to expectation the study revealed that trade liberalization has not been beneficial to the Nigerian economy. This study reports that there is no co-integration between trade openness and economic growth on the one hand, and with poverty reduction, on the other hand, both at 1 percent and 5percent significance levels. But, capital expenditure is the only variable that both impacts on growth and also trickles down to the ‘common man’ and thus reduces the poverty level of the Nigerian economy

Adegbemi, Babatunde & Ogundajo (2019), examined Poverty and trade liberalization: Empirical evidence from 21 African countries. The study investigated the possible nexus between trade liberalization and poverty in 21 African countries covering the period 2005–2014. The study employed descriptive statistics; the correlation matrix and variance inflator;

the panel unit root test; the pooled OLS technique; and the panel co-integration test (Johansen co-integration test). The findings reveal that foreign direct investment and inflation rate had a positive relationship with the human development index while exchange rates and trade openness were negatively related to poverty level at 5 percent level. The study recommended urgent policy measures aimed at revamping the poverty alleviation programmes. The study recommended that in a bid to diversify export market, developing countries should target other developing countries in the spirit of South–South cooperation.

European Commission, (2015), in their report on Export performance and Poverty reduction on Assessment of economic benefits generated by the EU Trade Regimes towards developing countries used several cross country data and several econometric techniques. The econometric analysis suggests that exports, on average, do not in themselves have a significant impact on poverty outcomes. However, when combined with better access to credit for domestic producers, there would be a poverty reducing impact of exports. This therefore suggests that participation on the world market may be an engine for poverty reduction if combined with the right domestic policies

Higgins and Prowse (2010) examined “Trade, growth and poverty: making Aid for Trade work for inclusive growth and poverty reduction” The paper sought to outline how Aid for Trade can support developing countries to maximize the inclusive growth and poverty reduction impacts of trade. The study outlined the linkages between trade, growth and poverty and highlighted some of the critical contextual factors that influence these linkages. The study concluded that there are entry points and approaches for Aid for Trade programming that have the potential to support trade expansion as well as trade-induced poverty reduction. Thus, implying that trade itself does not directly induce or impact poverty reduction, but via some predetermined linkages such as growth and employment.

Andrew and Krueger (2003) examined “Trade, Growth and Poverty, A Selective Survey”. The survey examined the importance of trade policy for poverty reduction. Evidence from a variety of sources (such as cross-country and panel growth regressions, industry and firm level research and case studies) supported the believe that trade often contributes greatly to growth. The survey however stated clearly that trade openness does not have any systematic effect on the poor beyond its effect on growth.

Santos-Paulino (2012), examined “Trade, Income Distribution and Poverty in Developing Countries: A Survey”. The paper surveys the theoretical and empirical research on how trade and trade liberalization affect poverty and income distribution in selected developed and less developed countries using descriptive and qualitative methodology. The findings revealed that trade liberalization improves aggregate welfare but the gains are small and unequally distributed. The welfare effects are measured basically through price changes, focusing on the effect on the relative demand for domestic factors of production and, in particular, the demand for skilled relative to unskilled labour. The findings shows that poverty constraints originate from various sources including infrastructure, skills, incomplete markets, and policy inadequacies

Omoke (2016), examined Trade Policy Reforms And Rural Poverty In Nigeria. The Paper investigated the impact of tariff reform and currency devaluation on rural poverty and inequality in Nigeria using a computable general equilibrium framework. The Study observed that trade liberalization reduces rural real wage and rural income leading to higher labour demand with worsening inequality. Currency devaluation was observed to raise the domestic

price of imports leading to better terms of trade for the urban import competing sector. Rural terms of trade also improved but this did not translate to higher per capita rural income and higher rural real wage. Rural inequality was observed to further deteriorate. Hence, the study calls attention to the fact that the policy of trade liberalization should be complemented with appropriate macroeconomic and sectoral policies that will ensure that gains from trade are equitably distributed.

Alanana (2016) carried out a research on appraisal of Poverty Alleviation Programmes in Benue, Nasarawa and Plateau States and adopted the Foster, Geer and Thorbecke (FGT) poverty index as well as the Z-test in tracing the poverty incidence among beneficiaries and discovered that there was no involvement of the poor themselves in the conception, planning and implementation of programmes meant for them. The adoption of the Foster, Geer and Thorbecke (FGT) poverty index which is restricted to the income perspective of poverty is also a shortcoming. Poverty is multi dimensional in nature, and goes beyond just lack of private income.

Taiwo and Agwu (2016) examined several poverty alleviation programmes in Nigeria, initiated by both the Government and Non-Government Organizations (NGOs), aimed at combating and alleviating poverty, have been found not to be successful. Instead of reducing the incidence of poverty, which is their sole aim, these programmes tend to serve as means for draining the national resources due to the pursuit of parochial interests, as a result fostering corruption and dishonesty. For a successful implementation of these programmes, the government and the implementation agencies must take a more proactive approach and specifically look into the area of poor management and poor accountability, among staff. Also poverty is a multidimensional issue, hence cannot be fought focusing only on one sector of the economy, strategies for poverty reduction must also be multidimensional, focusing on all sectors, as well as, on the emancipation of the poor. Strengthen the existing poverty alleviation strategies and ensuring good management could be one major way towards the effective performance of existing poverty alleviation programmes.

Ogwumike and Ekpenyong (2015) examined the utility of poverty measure that takes into account the basic needs of life based on Nigerian scene. The study used the core basic needs approach to poverty measure in Nigeria. Using data from a sample survey of households conducted in Borno, Imo and Oyo States between October 1984 and January 2013. The study revealed that a greater proportion of the population may continue to be deprived of their needs unless radical poverty eradication programmes are instituted in Nigeria.

Joseph (2015) assessed the impact of poverty reduction programmes as a development strategy in Nigeria from 1970 to 2010. The study first of all examined issues of poverty and underdevelopment in Nigeria, attributing it to lack of employment, high rate of illiteracy among the citizenry, poor infrastructure, inadequate access to micro credit facilities, mismanagement of public funds, bad governance, instability of the governments and its policies. The study also examined the efforts made by different governments in poverty alleviation within this period. In carrying out this study, a total of 717 respondents made up of men and women between the ages of 25 and 56 years, were drawn from six geopolitical zones in Nigeria; and administered with questionnaires, and their responses collated and analysed. The chi-square statistical technique and percentages were used in analysing the collated data, and testing of the research hypothesis. Results revealed that poverty alleviation initiatives of the Federal Government of Nigeria, since the 1970s till date have not significantly impacted positively on the lives of Nigerians, especially the poor; and has not

led to the overall reduction of poverty in Nigeria. The findings of the research also seem to strongly suggest that Nigerians at the rural areas are more likely to associate with poverty alleviation programmes in which they participated in contributing ideas into the initial policy design stages of such programmes, which they will later consent to at the rural level. The study concluded by suggesting that for any meaningful development alleviation programmes must be properly packaged, such that government would go into partnership with the rural people, in order to make implementation easier and successful; thus engendering economic self sustenance, economic growth and development.

Oyeranti and Olayiwola (2015) evaluated policies and programmes for poverty reduction in rural Nigeria. An examination of certain indicators of performance indicate that the domestic and international poverty reduction measures have had minimal impact in addressing the problems of poverty and also had insignificant impact on the living conditions of the poor. Their measure indicates that the strategies were badly implemented and even had no particular focus on the poor in terms of design and implementation. The strategies try as much as possible to create the opportunity and empower the poor, but they are found wanting in the areas of pro-poor growth and resource redistribution. They note that the effort of international agencies cannot be sustained due to lack of domestic supportive measures to guarantee its sustainability. This is understandable from the fact that states and local governments which have responsibilities for health care and education at the grassroots level and programmes which affect poverty alleviation, have much less share in the Federation Account. They stress that efficient design of poverty reduction programmes in Nigeria requires that the poor must be identified and targeted and policies adopted should be consistent and sustainable.

From the numerous local and foreign literatures reviewed above, little or no attention was given to the export growth - poverty reduction nexus, as the emphasis of most literatures were on trade liberalization and poverty reduction. This important vacuum to be filled motivated this study that aims at examining the impact of export growth on poverty reduction in Nigeria within the time frame of 1990-2019.

Methodology

The data for this study is a time series secondary data for the period 1990-2019, sourced from World Development Indicator (2019). Data on poverty rate (POV) will be used as proxy for poverty reduction as the dependent variable while export growth is proxied by total export, export development fund, export expansion grant fund and export credit and guarantee insurance scheme fund which all form the independent variable.

Method of Data Analysis

The data will be analyzed using descriptive and analytical tools. The descriptive tool involves the use of tables to present the data analyzed while the analytical tools consist of unit root test, co-integration test and Error Correction Model (ECM). The unit root test involves the use of Augmented Dickey Fuller to examine the stationarity of the variables employed, co-integration test to examine the long-run relationship among the variables, Error Correction Model to examine the impact of export growth on poverty reduction in Nigeria.

Model Specification

In building the model for this study, the Error Correction Model will be used. Hence, the functional form of the model can be specified as presented in Equation [1]

$$PV = f(\text{TEXP}, \text{EXDF}, \text{EEGF}, \text{ECGF}) \dots\dots\dots (1)$$

where: PV = Poverty Rate

TEXP= Total export

EXDF= Export development fund

EEGF= Export expansion grant fund

ECGF= Export credit and guarantee insurance fund

The model in mathematical form is specified in Equation [2]

$$PV = \alpha_0 + \alpha_1\text{TEXP} + \alpha_2\text{EXDF} + \alpha_3\text{EEGF} + \alpha_4\text{ECGF} \dots\dots\dots (2)$$

The model can also be stated in the stochastic or econometric form as represented in Equation [3]

$$PV = \alpha_0 + \alpha_1\text{TEXP} + \alpha_2\text{EXDF} + \alpha_3\text{EEGF} + \alpha_4\text{ECGF} + \mu \dots\dots\dots (3)$$

The Error Correction Mechanism/model form is presented thus as shown in Equation [4]

$$\ln PV_t = \alpha_0 + \alpha_1 \sum_{t=1}^n \Delta \ln \text{TEXP}_{t-i} + \alpha_2 \sum_{t=1}^n \Delta \ln \text{EXDF}_{t-i} + \alpha_3 \sum_{t=1}^n \Delta \ln \text{EEGF}_{t-i} + \alpha_4 \sum_{t=1}^n \Delta \ln \text{ECGF}_{t-i} + \sigma_1 \text{ECM}(-1) + \varepsilon_t \dots\dots\dots (4)$$

Unit Root Test

To attain the order of integration of the variables, unit root test was carried out to test for the presence of unit roots to know if the data are stationary or not, using the Augmented Dickey-Fuller (*ADF*) test.

Table 1: Unit Root Test Results

Variables	ADF	Critical Values (5%)	Probability	Order of integration
POV	-5.457	-2.971	0.000*	I(1)
TEXP	-8.873	-2.971	0.014*	I(1)
EXDF	-7.573	-2.971	0.000*	I(1)
EEGF	-4.328	-2.971	0.003*	I(1)
ECGF	-6.457	-2.971	0.042*	I(1)

*Indicates a sign at five percent level of significance

Source: Author's computation

The variables are stationary if Augmented Dickey Fuller statistic is greater than the critical value at 5% level of significance. If the variables are non-stationary at levels, they are differenced once to become stationary. If after the first difference, variables still remain non-stationary, they will be differenced the second time. The result of the Augmented Dickey Fuller Statistic test for unit root revealed that all the variables are stationary after the first difference. Since all the variables were integrated at first difference (1(1)), it requires the co-integration test.

Cointegration Test

The co-integration test was used to test for the existence of long run relationship among variables. The result of the co-integration test is given below.

Table 2: Cointegration Test Results

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.770612	70.38599	57.85613	0.0000
At most 1	0.378008	19.68813	29.79707	0.4442
At most 2	0.176609	5.918100	15.49471	0.7052
At most 3	0.009701	0.282705	3.841466	0.5949

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.770612	52.69785	37.58434	0.0001
At most 1	0.378008	13.77003	21.13162	0.3842
At most 2	0.176609	5.635396	14.26460	0.6603
At most 3	0.009701	0.282705	3.841466	0.5949

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

From the result above, the trace test statistics indicates 1 con-integrating equation at 5% level of significance while the max-Eigen value indicates 1 co-integrating equation at 5% critical level. The co-integration of the variables shows that there is a long run relationship between the variables. The existence of long run relationship also provides the basis for Error Correction Modeling.

Error Correction Model (ECM)

Table 3: Parsimonious Error Correction Model Results

Dependent Variable: D(LNPOV)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.504543	0.158673	3.179766	0.0237
D(LNPOV (-1))	0.251205	0.024374	10.30626	0.0063
D(LNTEXP(-1))	-0.241307	0.054373	-4.437993	0.0128
D(LNEXDF(-1))	-0.460557	0.061032	-7.546156	0.0007
D(LNEEGF(-2))	-0.337592	0.090442	-3.732691	0.0005
D(LNECGF(-2))	-0.456793	0.085543	-5.339923	0.0022
ECM(-1)	0.643315	0.221418	2.905432	0.0000

R-squared	0.804231	Durbin-Watson stat	1.903322
Adjusted R-squared	0.755442		
F-statistic	55.62850		
Prob(F-statistic)	0.000000		

Source: Author's Computation

Granger Causality Test

Table 4: Granger Causality Test Results

Null Hypothesis:	Obs	F-Statistic	Prob.
TEXP does not Granger Cause POV	32	9.26350	0.0018
POV does not Granger Cause TEXP		3.32679	0.0444
EXDF does not Granger Cause POV	32	5.09211	0.0123
POV does not Granger Cause EXDF		0.44816	0.6429
EEGF does not Granger Cause POV	32	6.63786	0.0352
POV does not Granger Cause EEGF		0.14950	0.8618
ECGF does not Granger Cause POV	32	0.14928	0.8619
POV does not Granger Cause ECGF		8.88546	0.0000

Source: Author's computation

Discussion of Findings

Error correction model is used to relate co-integrated variables in the short run. From table 3, the result showed that a 1% increase in total export (TEXP) would lead to decrease in Poverty Rate (POV) by about 24%. This implies that increase in export growth led to poverty reduction in Nigeria within the study period. The result in table 3 also showed that a 1% increase in export development fund (EXDF) would lead to decrease in Poverty Rate (POV) by about 46%. This implies that increase in export development fund led to poverty reduction in Nigeria within the study period. The result further showed that a 1% increase in export expansion grant fund (EEGF) would lead to a decrease in Poverty Rate (POV) by 34%. This implies that increase in export expansion grant fund led to poverty reduction in Nigeria within the study period. The result equally showed that a 1% increase in export credit and guarantee insurance scheme fund (ECGF) would lead to a decrease in Poverty Rate (POV) by 45%. This implies that increase in export credit and guarantee insurance scheme fund led to poverty reduction in Nigeria within the study period.

Generally, since ECM measures the speed of adjustment of a model that deviates from equilibrium in a short run and restored to equilibrium. The coefficient of the *ECM* responded to the speed of adjustment towards the long run equilibrium condition of the model. The

result indicates a speed of adjustment of 0.643315 which implies that about 64% of the deviation of variables employed in this study from equilibrium can be restored in one year.

The F-Statistic test is used to test the overall significance of the model. The calculated value of F-statistic is 55.62850 and the tabulated value of F-statistic is 9.145 at 5% level of significance. Since the calculated value of F-statistics is greater than the tabulated the value of F-statistic, then all the parameter estimates of the model are statistically significant. The value of coefficient of determination (R^2) is 0.804231 which implies that 80% of the total variation in Poverty Rate (POV) is explained by total export (TEXP), export development fund (EXDF), export expansion grant fund (EEGF) and export credit and guarantee insurance scheme fund (ECGF) while the remaining 20% unexplained is captured by the stochastic variable or error term.

The value of the Adjusted R^2 used in measuring the goodness-of-fit of the estimated model shows that after adjusting for degrees of freedom, about 76% of the systematic variation in the Poverty Rate (POV) is explained by changes total export (TEXP), export development fund (EXDF), export expansion grant fund (EEGF) and export credit and guarantee insurance scheme fund (ECGF) while the remaining 24% is explained by other variables not included in the model, but accounted for by the stochastic error term (μ). This means that the explanatory power of the model is high. Durbin Watson Statistic test is used to test for the presence or absence of autocorrelation or serial correlation in the model. The D.W statistic value of 1.903322 indicates the absence of autocorrelation or serial correlation in the model.

Table 4 shows the granger causality test result which revealed uni-directional relationship between export growth proxied by total export (TEXP), export development fund (EXDF), export expansion grant fund (EEGF) and export credit and guarantee insurance scheme fund (ECGF) and poverty reduction proxied by Poverty Rate (POV) in Nigeria. This is because the probability value of the F-Statistic is less than 0.05 based on the rule of thumb. Hence, this implies that export growth determined poverty reduction, but poverty reduction didn't determine export growth in Nigeria within the study period.

In summary, the study based on the Error correction model revealed that increase in total export led to decrease in Poverty Rate (POV) in Nigeria. Hence, this implies that export growth led to poverty reduction in Nigeria within the study period. The findings from this result conforms to the findings of Oyedele and Uduakobong (2013), Ayinde (2013), Otame (2016) and Adegbemi et al (2019) that all revealed that an increase in total export value or export growth have contributed in reducing poverty in the Nigerian economy. This is to further confirm that the government's introduction of export development fund, export expansion grant fund and the export credit and guarantee insurance scheme fund have over the years yielded positive impacts on the export sector and have in-turn contributed to poverty reduction in Nigeria.

Conclusion and Recommendations

There is no doubt that the Nigerian export sector still remains shallow, ill-equipped, and underdeveloped owing to lack of infrastructure and lack of a conducive environment for effective export growth operations that are requisite to earn the required foreign exchange from export trade. However, government's policy and attempt at introducing export development fund, export expansion grant fund and the export credit and guarantee insurance scheme fund have over the years yielded positive impacts on the export sector. This is evidenced in the findings of this study that revealed that export value or trade growth over the

years has succeeded in bringing down the level of poverty in the economy within the study period. Consequently, this study concludes that the export sector could be a sector to reckon with in terms of stimulating growth and development of the domestic economy when serious attempts and policies such as trade liberalization and others are used to complement it. Trade openness, financial openness and a high priority to vital non-oil exports in the form of agricultural produce can equally go a long way in positively complementing export trade and growth. This should be vigorously considered and pursued by the government.

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Impact of Petroleum Profit Tax, Company Income Tax and Value Added Tax on Nigeria's Economic Growth



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Abstract: *The study examines the impact of Petroleum Profit Tax, Company Income Tax and Value Added Tax on the Nigerian's Economic Growth. The research adopted expos-facto research as secondary data were used for the analysis. The study covered twenty four years period (1995-2018). Data were analyzed using the least squares regression techniques procedure while Augmented Dickey Fuller Unit Root Test and Single Equation Johansen Co-integration Test were carried out. It was found that PPT, CIT, and VAT have positive and significant impact on the Nigerian's GDP with the Adjusted R² of 83.3% which directly enhanced growth in Nigeria. Furthermore the compliance of tax payers and effort made by the tax collectors in putting strategized mechanism in place to generate revenue to Nigerian Government. This is as a result of gradual process of economic diversification coming to play. The study recommends that the government should put in place fiscal policies that will enhance investment in agriculture, industries and technology, provide the necessary human and material infrastructures and computerization of the integral tax operations that are needed to support petroleum and companies business so they can earn more income that will enhance taxation.*

Keywords: Company Income Tax (CIT), Petroleum Profit Tax (PPT), and Value Added Tax (VAT).

Introduction

Government raises funds from various sources such as issuing of public debt, levying of taxes, fees, fines and specific charges. Among the various sources from which Governments can raise finance, taxes are the most important and reliable source. Taxation is a tool by government in fashioning various aspects of economic growth. Taxes are instrument of fiscal policy. The purpose of taxation is to raise funds for activities which cannot be pursued without government action (Okafor, 2012). These include the public contribution to economic investment, as well as enabling people to meet their basic needs and enjoy wider opportunities. Without taxation, government cannot create a better society. The ways which federal government generate revenue can be through petroleum profit tax PPT, company income tax CIT, and value added tax VAT. The oil industries have achieved great prominence in the Nigerian economic environment since early seventies (Azubike, 2009). The Government has attached importance to oil exploration and production such that the taxation of profits of companies engaging in such operations are taxable under a tax law known as Petroleum Profits Tax Act (PPTA). Petroleum is the main source of energy and shapes the

political, socio-cultural, technological and economic destiny of the country. It is a source of power in international politics.

From 1970 to 2009 the petroleum industry generated 82% income for Federal Government while 18% came from non-oil revenue (Appah & Ebiringa 2012). According to (Azaiki & Shagari, 2007) the Petroleum industry constitutes a major source of income and occupies a strategic position in the economic development of Nigeria. For the past decades, the industry has been playing vital and downhome generation. The principal legislation governing petroleum operations in Nigeria is the Petroleum Profit Tax Act (PPTA) of 2007. Its main fiscal instrument is the petroleum profit tax (PPT). Under the PPT, the tax rate was set at 67.5 percent for the first five years of operations by the company and 85percent thereafter (Onyemachi 2012). It is therefore worthy of noting that oil and gas industry in Nigeria is very critical and without the income accruing from it, Nigerian government may not be able to carry out certain pubic expenditures and survive as a nation (Adigbe 2011). Such expenditure relates to socio-cultural, economic, military, Environmental, legal and political activities. Empirical investigation of the effects of this income (Petroleum profit tax) on the Nigerian economy is extremely crucial for the nation.

The problems with Nigerian economy have been traced to failure of successive governments to use oil revenue and excess crude oil income effectively in the development of other sectors of the economy. Over all, there has been poor performance of national institutions such as power, energy, road, transportation, politics, financial systems, and investment environment have been deteriorating and inefficient. Despite the fact that crude oil has been the source of Nigerian economy, the economy is facing with high rate of unemployment, wide spread oil spillage, increasing poor standard of living as a result of decreasing gross domestic product, per capita income, high rate of inflation and high level of interest rate which has led to the effect of the economic development. It is therefore important to examine the effect of petroleum profit tax (PPT) on economic growth in Nigeria. Companies are taxed under the Companies Income Tax Act introduced in 1961 with modification in 2007. Companies Income Tax (CIT) is charged on the profit or gain of any company accruing in Nigeria. The company income tax rate has been 30% and it is applied on the total profit or chargeable profit of the company (Adegbie & Fakile, 2011). According to Gwangi & Abubakar (2015), recognizing the need for improved and sustained efforts by government to raise revenue in Nigeria as a matter of urgency; certain offences have been created by the CITA the breach of which makes a company liable to stated penalties.

While CAMA regulates incorporation, control and management of companies, CITA charges to tax the profits of these companies. Before CITA can be effective, there must be in existence, companies brought into being by CAMA. Ariwodola (2000) companies' Income tax is chargeable on the global profits of Nigerian companies irrespective of whether or not they are brought into or received in Nigeria. The portion of the profits of non-Nigerian companies derived from such companies' operations in Nigeria. Dividend interests or royalties due to non-Nigerian Companies are assessed at ten percent (10%) withholding tax rate. Company Income tax is chargeable on the income of all companies operating in the country except those specifically exempted under the Act.

According to Ajakaiye (2000), the impressive performance of VAT in virtually provides a buoyant revenue base that usually yields significantly more revenue than other tax on year 2015 (CBN,2015). The revenue derived from VAT has been grossly understated as a result of several challenges. The factors responsible for the poor performance of VAT

revenue in Nigeria include: high rate of tax evasion and avoidance by companies, poor tax administration, poor taxpayers education, inconsistent government policies, and lack of adequate statistical data, inadequate manpower and corruption among tax officials. According to Iweala, (2013), about 75% of registered firms were not in the tax system and 65% of them had not filed their tax returns in the last 3 years. Over ₦80 billion was lost monthly from these companies, estimating the total Company Income Tax leakages in that period to about \$250 million. Therefore, it is pertinent to evaluate the effect of petroleum profit tax (PPT), company income tax (CIT) and Value Added Tax (VAT) on the economic growth of Nigeria. The general negative attitude on the part of citizen of the country towards paying tax, poses tax avoidance, under-utilized revenue from tax unaccountability on the side of tax administrators, cause a great set back to the development of the nation also, poor awareness of the issue of tax by the public, ineffective administration and implementation of tax, excessive dependence of imports, etc. It also becomes difficult to comply with tax law of all kind, since it involves giving out a percentage of ones income to the government. Nigeria is Africa's most populous nation and the largest economy in the continent, however faces some chronic power shortage, which reduce the cost of doing business that will enhance development to the Nation. According to EIA (2015) the power generation rate in Nigeria is estimated at 41%, 100 million people approximately leave in Nigeria without access to electricity. Despite the fact that Petroleum Profit Tax has been the main source of income to the Nigerian economy and Company Income Tax being the major source of income from non-oil revenue for example in 2014, Petroleum Profit Tax generated ₦2,453,947 trillion and Company Income Tax generated ₦1,173,491 trillion (CBN Statistical Bulletin, 2014). At the same time, oil theft leads to pipeline damage that is often severe, causing loss of production, pollution, and forcing companies to shut in production (EIA 2015). Petroleum profit tax which is supposed to be a source of finance for economic development has turned out to be a bone of contention between many interests groups precisely the government (Attamah, 2004). The administration of the companies' income tax in Nigeria is vested on the Federal Inland Revenue Services. The tax is payable by all companies at the rate defined by the Companies Income Tax Act (CITA). However despite there being regulation on Companies Income Tax in Nigeria, low tax compliance has become a matter of grave concern in Nigeria because it limits the capacity of the governments to raise revenues for development purposes. According to Naomi and Sule, (2015) Companies Income Tax has significant impact on the economy of any nation because it serves as a stimulus to economic growth. The some factors that are responsible for the poor performance of CIT revenue in Nigeria include: high rate of tax evasion and avoidance by companies, poor tax administration, poor taxpayers education, inconsistent government policies, and lack of adequate statistical data, inadequate manpower and corruption among tax officials. Therefore, it is pertinent to evaluate the effect of petroleum profit tax (PPT), company income tax (CIT) and Value Added Tax (VAT) on the economic growth of Nigeria. It is against this background that the study examined the impact of petroleum profit and the value added tax on Real Gross Domestic Product (RGDP) in Nigeria

Literature Review

Overview of PPT, CIT and VAT

The Petroleum Profit Tax Act (PPTA), which is the Act responsible for regulating the tax payable by companies in this sector, defined the operations of the upstream sector as "the winning or obtaining and transportation of petroleum product in Nigeria by or on behalf of a company for its own account by any drilling, mining, extracting or other like operations or process. Ewoma (2012) suggests that the distinct features of this sector can be seen in the

intensity of capital used by companies in this sector to carry out their operations, the high business risk involved, the use of unconventional accounting method, and the complexity of tax reporting and filing regime. On the other hand, the downstream sector involves all activities that support the operations and the conversion of crude oil produced into usable form. Hence, companies involved in refining, marketing, petrochemical sale, processing and marketing liquefied natural gas and oil field services are grouped under the downstream sector. The companies under this sector are liable to tax under the Companies Income Tax Act (CITA), 2004. The need for improved and sustained efforts by government to raise revenue in Nigeria as a matter of urgency; certain offences have been created by the CITA the breach of which makes a company liable to stated penalties. This is as a result of the large number of companies not captured in the tax net and even those captured there are incidence of tax evasion and avoidance hence having adverse consequence on revenue. A Company is defined by Section 93 (1) of the Companies Income Tax Act CAP 60 Laws of the Federation of Nigeria (LFN), 1990 as “any company or corporation other than a corporation sole, limited liability companies is being carried out by the Corporate Affairs Commission (CAC) in Nigeria. The world Limited (Ltd) or Public Company (Plc) is expected to end each name of a registered company (Gwangi & Abubakar, 2015).

The impact of PPT, CIT and VAT on Nigeria economy

Petroleum profit tax is one of the major ways to collect tax in Nigeria. Petroleum profit tax, according to Attamah (2004), is a legislation which imposes tax upon profits from the mining of petroleum in Nigeria and provides for the assessment and collection thereof and for the purposes connected therewith. One of the sources of petroleum income is the Petroleum Profit Tax. Accounting for income from oil and gas producing activities according to Gallun and Stevenson (1986), differ in many respects from financial accounting. The purpose of tax accounting is to gather information for the efficient preparation of income tax returns according to rules established by the Federal Board of Inland Revenue Code and Regulation (now Federal Inland Revenue Services). Besides the petroleum profit tax, Nigeria needs to meet its export commitment or quota approved by the Organization of Petroleum Exporting Countries (OPEC), scheduled dates of each supply agreement and resolve all necessary regulatory issues between government agencies and oil companies as operators of oil fields. Azaiki and Shagari (2007), brought out that countries blessed sufficient to have petroleum, can base their development on this resource. They point to the potential benefits of enhanced economic growth and the creation of jobs, increased government revenues to finance poverty alleviation, the transfer of technology, the improvement of infrastructure and the encouragement of related industries. Ogbonna (2009) expressed the view that the administration of Petroleum Profits Tax in Nigeria has mainly been focused on revenue generation to the detriment of stimulating economic growth and development.

According to Nwete (2004) the following are the objectives of petroleum taxation in Nigeria. To achieve government’s objective of exercising right and control over the public asset, Government imposes very high tax as a way of regulating the number of participants in the industry and discouraging its rapid depletion in other to conserve some of it for future generation. This in effect will achieve government aim of controlling the petroleum sector development. The high profile of a successful investment in the oil industry makes it a veritable source for satisfying government objective of raising money to meet its socio-political and economic obligations to the citizenry.

The Administration of PPT, CIT and VAT

Adegbie (2007) defined tax administration as “the legal system approved by the government body to have the charge, to have the direction, to manage or to provide various policies; laws and regulations for our tax system to ensure all applicable taxes are collected and remitted to the appropriate authorities”. Ogbonna (2010) opined that tax administration involves all the strategies and principles employed by a government to plan, impose, collect, account, control and co-ordinate personnel charged with the responsibility of taxation. From his opinion it can be inferred that tax administration has been placed with the responsibility of tax authorities and agencies of tax administration, in the case of the petroleum profit tax the Federal Inland Revenue Service (FIRS) has been placed in charge of its administration.

The FIRS is saddle with responsibility of carrying out such acts as may be deemed necessary or expedient for the assessment and collection of the tax to sue and be sued in the official tax name to acquire, hold and dispose any property taken as security for, or in satisfaction of any penalty, tax or judgment debt due from a company. It may authorize any person within or outside Nigeria to perform or exercise any of its powers or duties or receive any notice or other document to be served upon or delivered or given to the Service. (Ewoma, 2012).

McPherson (2004), as cited in (Abiola & Asiwah, 2012), opined that efficiency and effectiveness should be the main factors to be considered when designing a tax administration structure that will give a desired result. Tax administration can be said to be effective if high compliance by tax payers is ensured, on the other hand, it is said to be efficient if administrative costs are low relative to revenue collected. Also, Ogbonna (2011) opined that there should be effective and efficient tax administration if Nigerian government must achieve its objectives. As earlier stated, the focus of petroleum profit tax (PPT) in Nigeria is the upstream sector of the oil and gas industry which engages in oil production, mining and prospecting. The administration of the companies’ income tax in Nigeria is vested on the Federal Inland Revenue Services. The tax is payable by all companies at the rate defined by the Companies The administration of the companies’ income tax in Nigeria is vested on the Federal Inland Revenue Services. Income Tax Act (CITA).The Company Income Tax (CIT) has become a major source of revenue in many developed countries (Ajakaiye, 2000).

VAT is a consumption tax levied at each stage of the consumption chain and borne by the final consumer of the product or service. Each person is required to charge and collect VAT at a flat rate of 5% on all the invoiced amounts, on all amended. Where the VAT collected on behalf of the government (output VAT) in a particular month is more than the VAT paid to other persons (input VAT) in the same month, the difference is required to be remitted to the government, on a monthly basis, by the taxable person (Oserogho and Associates, 2008). Where the reverse is the case, the taxpayer is entitled to a refund of the excess VAT paid or more practically, to receive a tax credit of the excess VAT from the government. All exports are zero rated for VAT, i.e. no VAT is payable on exports. Also, VAT is payable in the currency of the transaction under which goods or services are exchanged (Umeora, 2013).

The Concept of Economic Growth

In strict basic economic theory there is a distinction between growth and increased production. Growth is about how the production possibility increases over time. The production possibility can increase due to a productivity increase and/or an increased supply of production factors. These are structural changes in the economy which in turn increase production. On the other hand, when production varies due to seasonal and/or cyclical

changes the production possibility in a country is still the same. However, the word growth is usually used to denote production increase.

Measurement of Economic Growth

There are different ways to measure economic growth on regional level. In Nigeria the GDP change is for instance used by Statistics and Agency for Economic and Regional Growth. The Nigerian Agency for Growth Policy Analysis (Growth Analysis) on the other hand uses changes in labour productivity as a measure of economic growth in regions Growth Analysis then use wage sum per employed or wage simpler inhabitant as an estimator for labor productivity. Gross Regional Product (GRP) is a summation of value added of all produced goods and services for all sectors in a region. In order to measure economic growth in a region of the following formula is used Nigerian Agency for Economic and Regional Growth operations include the areas of responsibility belonging FIRS and the Nigerian National Rural Development Agency as well as the Nigerians Consumer Agency's tasks concerning commercial and public service.

Theoretical Framework

The only theory identified provides a link between tax revenue generation and economic growth is expediency theory.

Expediency Theory This theory asserts that every tax proposal must pass the test of practicality. It must be the only consideration weighing with the authorities in choosing a tax proposal. Economic and social objectives of the state and the effects of a tax system should be treated irrelevant (Bhartia, 2009). Anyafo (1996) explained that the expediency theory is based on a link between tax liability and state activities. It assumes that the state should change the members of the society for the services provided by it. This reasoning justifies imposition of taxes for financing state activities by inferences, provides a basis, for apportioning the tax burden between members of society. This theory relates to a normal development process and represents a bench mark against which country specific empirical evidence may be compared. This study therefore focuses on the expediency theory which enables us to assess the extent to which the Nigeria tax system conforms to this scenario where the link between tax liability and economic activities are linked. This is because the expediency theory focuses on the fact that taxes are collected to achieve economic objective which enhances the growth and development of a country in all its spheres.

Review of Related Empirical Studies

Several studies have examined taxation as an instrument of economic development in different countries with diverse techniques. This review was done in line with the specific objective of the study.

Abdul-Rahamoh, Taiwo & Adejare, (2013) appraised the effect of petroleum profit tax on Nigerian Economy. The study covered a forty year period from (1970 to 2010). The analysis was done using multiple regression analysis. The study revealed that petroleum profit tax had significant impact on Nigerian economy. Ogbonna and Appah, (2012) using co-integration test and Granger Causality test as model Co-integration test result indicates the existence of long-run relationship between economic growth and petroleum profit tax. The granger causality test also shows that petroleum profit tax does granger causes on economic growth in Nigeria. It was also found that petroleum profit tax is a major factor for economic growth in Nigeria for the year under review. Success, *et al.*, (2012) investigated the impact of Petroleum Profit Tax on the economic development of Nigeria between the periods 2000 to

2010. Their findings reveal that petroleum profit tax positively impacts on gross domestic product (GDP) of Nigeria, and the impact is statistically significant.

Eyisi, Chioma and Bassey (2015) examined the effect of taxation on the macroeconomic performance in Nigeria using ordinary least squares regression method from 2002 to 2011 and found that revenue generation from taxation has a positive effect on the macroeconomic performance of the Nigerian economy. The study concluded that change in taxation will lead to high standard of living, provision of employment and reduction in interest rate. Kamiar and Hashem (2013) examined the impact of oil revenues on the Iranian economy for the period 1908 to 2010 and found that although oil has been produced in Iran over a long period, its importance in the Iranian economy was relatively small up until early 1960s. It was concluded that oil income has been both a blessing and a curse. In terms of maintaining and sustaining GDP growth, oil income has been a blessing. But it has also been a curse in inducing excess inflation, exchange rate volatility and macroeconomic inefficiencies, with adverse political and institutional implications.

Abdullahi, Madu & Abdullahi (2015) examined the evidence of petroleum resources on Nigerian economy using simple linear regression model from 2000 to 2009 and found that petroleum has a direct and positive significant relationship with the Nigeria economy and therefore concluded that petroleum has been the mainstay of Nigeria economy since its discovery and it constitutes the major source of our foreign reserves and main source of development capital. They showed no evidence of whether a unit root was conducted, and as such one would not be inclined to affirm a generalized statement as claimed by them. Adegbite (2015) examined the effects of corporate income tax on revenue profile; it also determined the impact of corporate tax revenue on economic growth in Nigeria using multiple regression analysis method from 1993 to 2013 and found that there is a positive significant impact of corporate tax on revenue in Nigeria. The study concluded that government should reduce corporate income tax rather than eliminate corporate tax in Nigeria; lower corporate tax will increase the demand for labour which will in turn raise wages and increase consumption.

Afubero and Okoye (2014) also studied the impact of taxation on revenue generation in Nigeria for the period 1994 to 2004. Using petroleum profit tax, education tax and personal income tax as proxy for taxation (independent variables) and gross domestic product as the dependent variable, regression analysis was employed by the researcher to analyse the data used in the study, and discovered that taxation has a significant contribution to revenue generation and that taxation has a significant contribution on Gross Domestic Product (GDP). Naomi and Sule (2015) studied the company income tax in the light for alternative financing for sustainable development in Nigeria. The study employed Ordinary Least Square (OLS) method and Co integration Test over the period 1987 – 2013 to analyse the long run relationship between company income tax and revenue generation in Nigeria. The study concluded that there is a positive and significant relationship between company income tax and revenue generation in Nigeria. It has been identified that none of the existing studies relate the petroleum profit tax and company income tax to Nigeria economic growth in terms of the ability of the government to meet its capital and recurrent expenditures which will in turn increase gross domestic product. The task of filling this gap is undertaken in this study. Nwezeaku, (2005) affirms that PPT involves the charging of tax on the income accruing from petroleum operations. He notes that the importance of petroleum to the Nigeria economy gave rise to the enactment of different laws regulating taxation of incomes from petroleum operations. Petroleum profit tax is a tax applicable to upstream operations in the oil industry

as it is related to rent, royalties, margin, oil mining prospecting and exploration leases. It is the most important tax in Nigeria in terms of its share of total revenue, contributing over 70% of government revenue and 95% of foreign exchange earnings (Odusola, 2006). Okpe, (2003), have it that petroleum profit is levied on the current year basis. That is to say, the basis period for petroleum profit tax (PPT) is the actual profit of the accounting period. Put in another way, the basis period for any assessment year is the same as the accounting period of the company.

Olatunji and Adegbite, (2014) studied the effect of petroleum profit tax interest Rate and Money Supply on Nigeria Economy from 1970 to 2010; multiple regression were employed to analyze the relationship among variable. The analysis revealed that short run effect of petroleum profit tax was positive while that of interest rate was positive on economic growth. The study indicate that petroleum contribute positively to income.

Manukaji, (2018) studied the effect of tax structure on economic growth in Nigeria spanning between 1994 to 2016. Tax was disaggregated into value added tax, petroleum profit tax, personal income tax and company income tax. These tax components were regressed against gross domestic product which is a proxy for economic growth. The data generated were analyzed using descriptive statistics, stationary test, integration test and ordinary least square. The study found that all the tax components studied (Value added tax revenue, personal income tax revenue, petroleum profit tax revenue and company income tax revenue) has significant effect on economic growth in Nigeria. Usman and Adegbite, (2015) examined the impact of petroleum profit tax on economic growth in Nigeria using time series data spanning the period 1978-2013. They applied Johansen co-integration and the Granger causality tests. The studied revealed that petroleum profit tax has positive significant impact on GDP both in the short run and in the long run. Also, PPT does not granger cause GDP.

Cornelius, Ogar and Oka, (2016) study examined the impact of tax revenue on the Nigerian economy using time series data spanning between 1986 to 2010. The study applied Ordinary least squares of multiple regression models was used to establish the relationship between dependent and independent variables. The finding revealed that there is a significant relationship between petroleum profit tax and the growth of the Nigeria economy. It showed that there is a significant relationship between non-oil revenue and the growth of the Nigeria economy. The finding also revealed that there is no significant relationship between company income tax and the growth of the Nigeria economy. Okoh, Onyekwelu, and Iyidiobi, (2016) examined the effect of petroleum profit tax on economic growth of Nigeria used time series data spanning for twelve years 2004 to 2015. The study adopted expos-facto research as secondary data were used for the analysis and applied simple linear regression. The results revealed that PPT had positive and significant effect on Nigerian GDP.

Methodology

Guided by the perceived functional relationship between the matrix of economic growth (GDP) with PPT, CIT and VAT revenue, a link is forged among the 4(four) variables. From sub-macro and micro economic perspectives, the model for this work states that economic growth (GDP) depends on PPT, CIT and VAT revenue. The model which is in line with the work of Bakare and Yahaya (2018) is a modified form of the model specified by Anyanwu (2007) in his study of Nigeria's tax efforts and economy development. Thus, the functional relationship and the resultant models are as specified below:

$$Y_t = f(X_{1t} + X_{2t} + X_{3t} + U_{it}) \dots \dots \dots 1$$

Where

Y= dependent variable

X₁-X₃ = independent variables

t = time factor

Having the dependent variable as RGDP (in billions), while the independent variables are: PPT, CIT, and VAT (in billions). CIT and VAT acting as the control variables, in the above function from our model 1 for the study can now be properly specified as:

$$RGDP_t = \beta_0 + \beta_1 PPT_t + \beta_2 CIT_t + \beta_3 VAT_t + U_{it} \dots\dots\dots 2$$

Where RGDP is the Real Gross Domestic Product GDP in Billions of Naira

PPT is the Petroleum Profit Tax Revenue in Billions of Naira

CIT is the Company Income Tax in Billions of Naira

VAT is the Value Added Tax in Billions of Naira

$\beta_0, \beta_1, \beta_2$ and β_3 are the parameters

t is the present time period

Since the data to be used for the analysis is time series, we employed co-integration tests to avoid spurious regression. The first step would be a diagnostic test of each of the variables for stationarity. This study employs the Augmented Dickey - Fuller test for unit root. If any of the series found to be integrated, then a co-integration test conducted using Johansen Co-integration Test.

Nature and Sources of Data

Secondary data is extracted from various reports of the Federal Inland Revenue Service (FIRS) and the Central Bank of Nigeria (CBN) statistical bulletin, Federal Ministry of Finance and Nigerian National Petroleum Corporation Annual Statistical Bulletin were used in this study. The data consist of Petroleum Profit Tax (PPT), Company Income Tax (CIT) Value Added Tax and Economic Growth (EG) between 1995 and 2018 in Nigeria. Regression technique was adopted as our tool of analysis as it was found appropriate for the data analysis.

Estimation Technique

The study adopts a time series data analysis research method but the data were estimated using fully Modified Least Square (FMLS) Regression Technique. The data were analyzed using E-views version 10. The steps includes the testing of the series individually for stationarity using the Engle and Granger (1987) two step approach to determine the order of integration of the variables using the Augmented Dickey-Fuller (ADF) set of unit root test. After that we proceeded to search for the existence of long-run equilibrium causal relationship among petroleum profit tax, company income tax, value added tax and the economic growth variables.

Data Presentations, Result and Discussions

Preliminary Analysis:

Table 1 Augmented Dickey-Fuller (ADF) Unit Root Test

Variables	t-statistic	Prob @ 5% sig level	Order of integration
GDP	-3.020686	0.0325	1(2)
Ppt	-3.012696	0.0448	1(1)
Cit	-3.030341	0.0093	1(1)
VAT	-3.040391	0.0062	1(1)

Source: Author's Computations 2021

Table 1 shows the result of unit root test with the use of augmented dickey-fuller (ADF). The result shows that all the variables are stationary after first difference I (1) except GDP this means that there is present of unit root in the variables that is, there is present of short term variance among the variables. Since there is present of short term variance among the variables, this will lead to the test for long term variance through the use of is co integration test.

Table 2: Co-integration test (Johansen Co-integration)

Included observations: 29 after adjustments
 Trend assumption: No deterministic trend
 Series: LGDP LPPT LCIT LVAT
 Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.562100	45.95066	40.17493	0.0118
At most 1	0.317772	22.00347	24.27596	0.0942
At most 2	0.298593	10.91412	12.32090	0.0850
At most 3	0.021448	0.628762	4.129906	0.4886

Trace test indicates 1 cointegrating eqn(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 using *EViews* version 10. 2021

Table 2: presents the result of Johansen co-integration. Trace statistic values are compared to the critical values at 5% and the null hypothesis of no co-integrating or the existences of almost one co-integration vector were rejected, the result shows that there is no present of co-integration in the model. Therefore, a long run relationship does not exist in the variables.

Hypothesis Testing:

Table 3: Effect of petroleum profit tax, company income tax and value added tax on gross domestic product in Nigeria.

Least Squares Regression Results

Dependent Variable: LGDP
 Method: Least Squares
 Date: 05/11/21 Time: 16:13
 Sample: 1995 2018
 Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPPT	0.333087	0.095082	3.503166	0.0016
LCIT	0.545891	0.144000	3.790910	0.0007
LVAT	0.418582	0.122744	3.410201	0.0020
R-squared	-0.833172	Mean dependent var		3.227317
Adjusted R-squared	-0.964113	S.D. dependent var		0.125888
S.E. of regression	0.176428	Akaike info criterion		-0.540043
Sum squared resid	0.871551	Schwarz criterion		-0.401270
Log likelihood	11.37067	Hannan-Quinn criter.		-0.494807
Durbin-Watson stat	1.143095			

Source: Author’s computation using *EViews* version 10. 2021

Table 3 shows the linear relationship between petroleum profit tax, company income tax, value added tax and gross domestic product in Nigeria with the use of regression analysis. The result obtained from the static model indicates that the overall coefficient of determination R-squared (R^2) shows that the equation has a good fit with 83.3 percent of variations in gross domestic product, and In terms of the sign of the coefficient which signify the effect of petroleum profit tax, company income tax, value added tax on gross domestic product, the result shows that the three variables PPT, CIT and VAT concur with *a priori* expectation with positive sign, this means that there is direct relationship between petroleum profit tax, company income tax, value added tax and gross domestic product the findings is in line with the result of Okoh, Onyekwelu & Iyidiobi (2016).

In terms of the magnitude of the coefficient that signifies the first objective of the study which state that Petroleum Profit Tax has no effect on gross domestic product in Nigeria. The coefficient PPT clearly has significant effect on gross domestic product as indicated by coefficient (0.333087) with prob (0.0016) at 5% level of significant. Thus, the null hypothesis was rejected; means that 1% increase in the petroleum profit tax will induce 0.33% increase in gross domestic product and also 1% decrease in the petroleum profit tax will induce 0.33% decrease in gross domestic product. Also in term of the magnitude of the coefficient that signify the second objective of the study which state that company income tax has no effect on gross domestic product in Nigeria. The coefficient CIT clearly has significant effect on gross domestic product as indicated by coefficient (0.545891) with prob (0.0007) at 5% level of significant, the null hypothesis was rejected, this means that 1% increase in the company income tax will induce 0.55% increase in gross domestic product and also 1% decrease in the company income tax will induce 0.55% decrease in gross domestic product. The was also evident in the study of Okafor (2012) and Naomi and Sule (2015) where each study shows that company income tax has a positive impact on Nigeria's gross domestic product.

Finally, in term of the magnitude of the coefficient of the third objective which state that value added tax has no effect on gross domestic product in Nigeria. The coefficient VAT clearly has significant effect on gross domestic product as indicated by coefficient (0.418582) with prob (0.0020) at 5% level of significant, the null hypothesis was rejected, this means that 1% increase in the value added tax will induce 0.42% increase in gross domestic product and also 1% decrease in the value added tax will induce 0.42% decrease in gross domestic product. The result here agree with the study conducted by Adegbe (2015) which state that a strong relationship exists between and value added tax and the economic growth of Nigeria. However it disagrees with the study of Ewoma (2007).

Conclusion and Recommendations

Discussion of Findings

This study empirically analyzed petroleum profit tax, company income tax and value added tax impact on Nigerian economic growth using least squares regression technique procedure. The discussion of the findings is based on its specific objective:

In other to examine the effect of Petroleum Profit tax on Economic Growth in Nigeria, the result of the estimated model shows that petroleum profit tax has a positive and significant effect on Real Gross Domestic Product. This may be attributed to the effort of tax collectors that lead to positive results in Nigeria. This finding concur with the findings of Manukaji, (2018), Usman & Adegbite, (2015), Abdul-Rahamoh, Taiwo & Adejare, (2013), Ogbonna & Appah, (2012) who discovered petroleum profit tax positive and significant effect on economic growth, which may be as a result of gradual process of economic diversification

coming to play. The hypothesis of petroleum profit tax has no significant effect on Real Gross Domestic Product was accepted and the null hypothesis rejected.

This study also discovered that Company Income Tax as control variable has positive and significant effect of Real Gross Domestic Product in Nigeria. This finding is in line with the findings of Manukaji, (2018) who discover Company Income Tax has positive and significant effect on Real Gross Domestic Product in Nigeria. However, this finding is refute the findings of Cornelius, Ogar and Oka, (2016) who discovered positive and no significant effect of Company Income Tax on Real Gross Domestic Product in Nigeria. This study equally discovered that Value Added Tax has positive and significant effect on Real Gross Domestic Product in Nigeria. This finding is in conformity to the findings of Manukaji, (2018) who discover that Value Added Tax has positive and significant effect on Real Gross Domestic Product in Nigeria.

Summary of Findings

This study has been able to analyze the effect of petroleum profit tax, company income tax and value added tax on economic growth in Nigeria. Section one introduces petroleum profit tax, company income tax and value added tax. Section two extracts the relevant work of other researchers who have carried out research relating to petroleum profit tax, company income tax and value added tax. Section three is based on the methodology which focuses on the sampling technique that was used by the researchers in solving the hypotheses. A time series research design was adopted by the study, data was obtained from Central Bank of Nigeria Statistical Bulletin 2014, Federal Ministry of Finance and Nigerian National Petroleum Corporation Annual Statistical Bulletin 2014 and co-integration regression analysis was adopted.

Conclusions

In the light of the findings of this study, the following conclusion was drawn: Evidence from the study indicating, positive significant effect of Petroleum Profit Tax on Gross Domestic Product in Nigeria. It concluded as follows: Petroleum Profit tax has positive impact on the Nigeria economic Growth. Company income tax has positive, impact on the Nigeria economic Growth. Value added tax has a positive impact on the Nigeria economic Growth.

Recommendations

Drawing from the findings of this study, the following recommendations are put forward: The Nigeria Government should still coordinate and encourage the petroleum sector to grow so that more revenue should accrue in support of other sector through resources rent channel which may boost the level of tax compliance in Nigeria. Government should embark on policies and programmers that will enhance the level of income of the citizens so as to raise the consumption level of the people with a view to accelerating investment, employment, output, and ultimately value added tax revenue as an alternative means. For proper implementation of fiscal policy system, the government should engage in a complete re-organization of the tax administrative machineries in order to reduce tolerable problems of tax evasion and avoidance. Finally, the provision of basic infrastructure is quite necessary for development and growth of any society, and it is only by a good and an efficient tax system can a nation achieve its social responsibility. Therefore, government should put in place social amenities for effective tax system.

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Management of Non-Oil Trade deficit in Nigeria



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Abstract: Nigeria has sustained a deficit in its non-oil trade for many years, that is, it imports non-oil commodities in much larger quantities than it exports to the outside world. This paper aimed to find out the ways Nigeria can benefit in framing policies to manage non-oil trade deficit by examining some key economic variables. Using Autoregressive Distributed Lag (ARDL) approach, the annual time series data set for the period 1981 – 2018 was put to empirical testing, to investigate whether long run and short run relationships exist between non-oil trade deficit in Nigeria and some key variables that are found useful in previous researches. The model used was derived from the Absorption and Monetary approaches to balance of payment. Findings from the study suggest that real effective exchange rate and money supply have significant positive relationship with non-oil trade deficit, while international reserve has significant negative relationship with the non-oil trade deficit. The result therefore substantiates the use of exchange rate as a policy tool to reduce the non-oil deficit. The paper recommends that policy makers prioritize controlling exchange rate, international reserve and money supply in managing non-oil trade deficit.

Keywords: Money supply; Non-oil export; Non-oil import; Non-oil trade deficit,

Introduction

Economic theories like J-Curve hypothesis and Marshal-learner condition have explained the role of exchange rate as the major determinant of country's trade balance. However, some empirical works have found weak statistical evidence connecting real exchange rate and trade balance (Duasa, 2007; Loto, 2011; Baba & Yazici, 2016; Akinbode & Ojo, 2018). Similarly, cross –country studies like Hsing (2008) have shown that real exchange rate changes have impact on trade balance for some countries, and not for all countries.

Nigeria, like some other oil exporting countries, has sustained a deficit in the non-oil trade sector. In recent years, the Nigerian export sector has been consistently dominated by oil export while its import is conversely, dominated by non-oil commodities. By 2016 over 71% of Nigeria's imports consisted of non-oil items, while oil constituted over 80% of Nigeria's exports. (NATPOR, 2017) . Data from the Central bank also indicates that more than 80% of the export earnings come from oil sector (CBN, 2018).

Although there is theoretical contention on whether trade deficit is in the long run bad or good to an economy (see Griswold 1998 and Moon 2001) Nigeria trade policies are inclined towards reducing the deficit most notably by promoting non-oil exports. Some of the past efforts include establishment of The Nigerian Export promotion council of 1970s, The Nigerian Export-import Bank (NEXIM) and Export processing Zones of 1990s. Recently, in the face of declining oil prices and uncertainty in regards to foreign reserves, Nigeria sought

to manage its non-oil trade deficit by encouraging local production and the renewed protectionism of restricting the importation of some essential goods.

Three major theories are related to the trade balance in general. The Elasticity approach also called the BRM model (Bickerdike, 1920; Robinson, 1947; Metzler, 1948) explained that adjustment in the exchange rate influences trade balance. The BRM approach is based on the effects brought about by consumption and production and the substitution effects that is as a result of the adjustment in exchange. The second is absorption approach developed by Alexander (1952) and later elaborated by Johnson (1972). The central argument of this approach is that any improvement in the trade balance requires an increase in income to exceed over total domestic expenditure. The monetary approach on the other hand considers trade balance as a monetary phenomenon. According to this approach trade balance is determined by the supply and demand for money in a given economy. If peoples demand for money exceeds its supply by the central bank, balance of trade will improve, since the excess demand gap will be filled by inflows of money from abroad (Duasa, 2007).

Recently, empirical works have been conducted on the trade balance, more specifically how exchange rate changes influence trade balance. However, most of the studies in Nigeria examined the aggregate trade balance i.e. both oil and non-oil trade which always tend to be in surplus (Ifeyinwa, Idenyi & BigBen, 2016; Ewubare & Mirenini 2019; Akande, Adeniyi & Ademola, 2019). other studies such as Ndidì & Alaba (2019) examined how exchange rate and other factors affects non-oil export only leaving out the non-oil import. But since the Nigerian trade policies are geared towards improving the non-oil export and at the same time restricting the inflow of some non-oil goods, a research on the non-oil trade deficit may produce even more useful results for policy making.

This paper therefore examines the determinants of the non-oil trade deficit in Nigeria. Specifically, the study examines whether there is evidence of relationship between non-oil trade deficit in Nigeria and real exchange rate, GDP, money supply and international reserve using Autoregressive Distributed Lag Model.

Literature Review

Recent Empirical works in Nigeria on trade balance addressed the issues of exchange rate as the major determinant of the aggregate trade balance, while others focus on non-oil export. Ewubare and Mirenini (2019) examined the impact of exchange rate fluctuations on foreign trade in Nigeria. They found evidence of long run and short run relationship between trade balance and exchange rate in Nigeria. Another related study by Akande, Adeniyi and Ademola (2019) also confirmed the existence of long run and short run relationship between exchange dynamic and trade balance in Nigeria.

In contrast, Baba and Yezici (2016) investigated the existence of bilateral J-curve between Nigeria and European Union. Using ARDL model to estimate quarterly data that spanned between 1999 and 2012, they found no evidence of the existence of relationship between exchange and bilateral trade with the European Union. In another study, Ifeyinwa, Idenyi & BigBen (2016) examined the effects of exchange rate depreciation and trade balance in Nigeria using co-integration test and causality. Their finding indicated that exchange rate depreciation has no significant effect on the Nigerian trade balance. Their finding confirmed and earlier study by Loto (2011) whose empirical result, using OLS method, showed no evidence that devaluation improves trade balance in Nigeria.

Among the researches that delved into the non-oil trade in Nigeria include Ndidi & Alaba (2019) who empirically investigated the impact of exchange volatility on non-oil export performance in Nigeria. The results indicated that exchange rate has an ARCH effect on non-oil export performance in Nigeria and more so, significantly and negatively on it. Inam and Oscar (2018) analyzed the relationship between exchange rate volatility and non-oil exports in Nigeria using annual data covering the period of 1970 to 2015. The study employed the Johansen test of Cointegration, Error Correction Model (ECM), and the Granger Causality test to achieve the objectives. Their findings indicated that there exists both long run and short run relationship between Exchange rate and Non-oil Exports in Nigeria.

Akinbode and Ojo (2018) examined the effect of exchange rate on agricultural export in Nigeria. Using ARDL model the results of their study indicated that exchange rate volatility did not significantly affect exports both in the short-run and the long-run. In a closely related research, Imoughele & Ismaila (2015) examined the impact of foreign exchange rate on Nigeria non-oil export using the OLS technique of estimation. The result indicated that effective exchange rate, money supply, credit to the private sector and economic performance have a significant impact on the growth of non-oil export in the Nigerian economy and appreciation of exchange rate has negative effects on non-oil export.

Apart from Nigeria, related studies were also conducted in other countries. Aljebrin (2019) using Dynamic OLS investigate the relationships between Saudi Arabia's non-oil trade deficit and specific economic measures that were related to trade deficit. The study confirmed a positive relationship between the non-oil trade deficit and real income, relative national prices to foreign prices, and international reserves. In contrast, a negative and considerable correlation was found between the Real Effective Exchange Rate (REER) and the non-oil trade deficit.

Earlier study by Ibrahim (2016) using DOLS also had similarly confirmed the existence of positive relationship among trade deficit in Egypt, real income, domestic prices relative to foreign prices and international reserve while there is negative relationship between the trade deficit and real effective exchange rate.

Weerasinghe & Perera (2019) examined the determinants of trade balanced in Sri Lankan Economy. His findings suggest that gross domestic product, volume of import and inflation rate have significant impact on the balance of trade in the Sri Lankan Economy while direct foreign investment and nominal exchange rate had not influence the current situation. In a study on the current account imbalance, Behar & Fouejieu (2016) argued that the function of the exchange rate is undermined by the oil exporters' peculiarities, which calls for much reliance on fiscal policy. Their evidence was based on a regression analysis of the determinants of the current account balance and the trade balance. In another study, Mohammad (2010) examined both the long-term and short-term determinants of Pakistan's trade deficit using annual data from 1975 to 2008, using co-integration and Vector error correction model. The results of the study provided robust evidence that all of the variables significantly affected Pakistan's trade deficit.

In a closely related study Falk (2008) employed both fixed-effects models and linear-mixed models, in a cross-country study involving 32 advanced and emerging economies. The study concluded that the trade balance as a GDP allocation has substantial positive relationship to the real foreign GDP per capita of the trading partners. Trade balance is adversely affected by

real domestic GDP per capita, and it improves with a real devaluation of the real exchange rate index.

Duasa (2007) examined the short- and long-run relationships between trade balance, real exchange rates, income and money supply in the case of Malaysia. The study found evidence that a long run relationship between trade balance and income and money supply variables exists but not between trade balance and real exchange rate.

Methodology

Data sources and Measurement of Variables

Time series data readily published covering 1981 to 2018 is used. Variables used are; non-oil trade deficit, real income, money supply, real effective exchange rate and international reserves. Trade deficit is the difference between non-oil export and non-oil import expressed in absolute values. The study used real effective exchange rate because it takes into account the relative weight of the trading partners of Nigeria. Data on real income, money supply non-oil trade balance and international reserve are sourced from the central bank statistical bulletins of 2018 in billion Naira, while real effective exchange rate and international reserve are sourced from WDI.

Estimation Techniques and Model Specification

The paper used the ARDL approach by Pesaran and Shin (1995, 1999), to test the causal direction between variables. The ARDL model has advantage over the conventional Johansen and Juselius (1990) co-integration techniques in the sense that the ARDL uses a single reduced form equation (Pesaran & Shin, 1995). The ARDL approach also does not involve pre-testing of variables, which means that the test on the existing relationship between variables in levels works well whether the underlying regressors are purely I (0), purely I (1) or a combination of both (Duasa, 2007).

Following the results of the unit root test (See Table 1), the ARDL method was found suitable. The Schwartz Information Criteria (SIC) was considered in determining the best model because of its parsimony. The breakpoint test of Perron (1989) has confirmed the existence of structural break in the data in 1986. The break is probably due to the exchange rate liberalization policy under the Structural Adjustment Programme (SAP) in 1986 which gave way to flexible exchange rate regime in Nigeria.

The logarithmic form of the econometric model is given below;

$$\text{LnDeficit}_t = \beta_0 + \beta_1 \text{LnRGDP}_t + \beta_2 \text{LnREER}_t + \beta_3 \text{LnM2} + \beta_4 \text{LnR} + \mu_t \dots \dots \dots (1)$$

Here, Deficit refers to non-oil trade deficit, RGDP means real income, REER is the real effective exchange rate, M2 refers to the broad money supply and R means international reserve. Ln refers to the natural logs as taken in all the variables and $\mu_t \dots$ refers to the error term. International reserve is included because it is found useful in similar studies conducted by Ajebrin (2019) and Ibrahim (2016). The equation of the conditional error correction model of the ARDL approach is specified as follows;

$$\Delta \text{LnDeficit}_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta \text{LnDeficit}_{t-i} + \sum_{i=0}^p \beta_2 \Delta \text{LnGDP}_{t-i} + \sum_{i=0}^p \beta_3 \Delta \text{LnREER}_{t-i} + \sum_{i=0}^p \beta_4 \Delta \text{LnM2}_{t-i} + \sum_{i=0}^p \beta_5 \Delta \text{LnR}_{t-i} + \delta_1 \text{LnDeficit}_{t-1} + \delta_2 \text{LnGDP}_{t-1} + \delta_3 \text{LnREER}_{t-1} + \delta_4 \text{LnM2}_{t-1} + \delta_5 \text{LnR}_{t-1} + \delta_5 \text{DUM} + \mu_t \dots \dots \dots (2)$$

The null hypothesis for no cointegration among variables in equation (2) is $H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6 = 0$ against the alternative hypothesis $H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq \delta_6 \neq 0$. Because

the result of Perron (1989) breakpoint test showed that the dependent variable (non-oil trade deficit) has undergone a structural break in 1986, the dummy variable DUM is included in equation 2 to represent the structural break. The dummy variable (DUM) takes the value of 0 until 1986 and 1 thereafter. The decision of whether to reject hypothesis or not, is based on the calculated *F*-Statistic. If the *F*-test statistic exceeds their respective upper critical values, it can be concluded that a long-run relationship among the variables exists, irrespective to their order of integration. On the other hand, If the test statistic is below the upper critical value, we do not reject the null hypothesis of no co-integration.

On finding evidence of co integration among the variables the following long run model is estimated.

$$\ln \text{Deficit}_t = \beta_0 + \sum_{i=1}^p \beta_1 \ln \text{Deficit}_{t-i} + \sum_{i=0}^p \beta_2 \ln \text{GDP}_{t-i} + \sum_{i=0}^p \beta_3 \ln \text{REER}_{t-i} + \sum_{i=0}^p \beta_4 \ln \text{M2}_{t-i} + \sum_{i=0}^p \beta_5 \ln \text{R}_{t-i} + \mu_t \dots \dots \dots (3)$$

while the short run model of the ARDL is estimated as follows;

$$\Delta \ln \text{Deficit}_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta \ln \text{Deficit}_{t-i} + \sum_{i=0}^p \beta_2 \Delta \ln \text{GDP}_{t-i} + \sum_{i=0}^p \beta_3 \Delta \ln \text{REER}_{t-i} + \sum_{i=0}^p \beta_4 \Delta \ln \text{M2}_{t-i} + \sum_{i=0}^p \beta_5 \Delta \ln \text{R}_{t-i} + \Phi \text{ECM}_{t-1} + \varepsilon_t \dots \dots \dots (4)$$

Where ECM is the error correction term and Φ represents the speed of adjustment.

Results and Discussion

Before cointegration test, a unit root test was conducted to determine the stationarity of the variables. Results for **Augmented Dickey-fuller (ADF)** and **Phillips-Perron (PP)** tests are presented in the table below;

Table 1: Unit Root Test

Series	ADF test statistic at level		PP test statistic level	
	Level	First Difference	Level	First Difference
LnDeficit	-0.964839	-7.299094*	-0.737968	-7.244467*
LnGDP	-0.027819	-3.395653*	0.684590	-3.242632*
LnREER	-2.170570	-4.592019*	-2.355676	-4.455421*
lnM2	0.756056	-3.662953*	-0.642565	-3.634350*
lnR	-1.377003	-3.830324*	-0.881608	-6.651251*

*indicates significance at 5% level
 Source: Author's estimations using Eviews 10

Table 1 above indicates that all the variables are integrated of order one *I*(1) and therefore, long run testing of the ARDL model can be proceeded.

To examine the long run relationship among the variables, equation (2) is estimated. Lags length was selected by minimizing the SIC. The Bound test in table 2 reports the results of the *F*-test for the existence of co-integration among the variables. The *F*-statistic value of 6.61429, which is above the upper bound of 3.49 at the 5% level of significance, rejects the null hypothesis of no equilibrating relationship. This confirmed the presence of a long-run relationship among the variables in the model.

Table 2: ARDL Bound Test Result

Test Statistic	Value	K
F-Statistic	6.61429	4
Critical Value Bounds (Restricted intercept and no trend)		
Significance level	I(0)	I(1)
10%	2.2	3.09
5%	2.56	3.49
2.50%	2.88	3.87
1%	3.29	4.37

Source: Author's estimations using Eviews 10

Table 3: Long run model

Dependent Variable	Variable	Independent Variables			
		lnRGDP	lnREER	lnM2	lnR
lnDeficit		-0.7192 (0.1184)	0.2910* (0.0342)	1.047225 (0.3209)	-0.2639* (0.0307)

Note: P-values are reported in parenthesis, *indicates significance level at 5%

Source: Author's estimations using Eviews 10

Table 3 presents the empirical results of the long run model. The variables which have significant relationship with the non-oil trade deficit in the long run are the real effective exchange rate (REER) and international reserves. Real effective exchange rate is positively related to the non-oil trade deficit. That is, appreciation of the exchange rate leads to the increase in the trade deficit. In other words, trade deficit worsen when exchange rate increases. International reserve on the other hand, affects the trade balance negatively. That is, more reserves decrease the deficit or improves the non-oil trade balance. This however, contradicts two similar studies by Ajebrin (2019) and Ibrahim (2016) in Saudi Arabia and Egypt respectively. Both found international reserve to have positive relationship with the trade deficit. Money supply and real income do not appear to have significant impact on the trade deficit in the long run.

Table 4: Short run Model for the Non-oil Trade balance

Dependent Variable $d(\ln\text{NTD}_t)$			
Independent Variable	Coefficient	Std. Error	t-Statistic
$d(\ln\text{Deficit})_{t-1}$	-0.48344*	0.11708	-4.12913
$d(\ln\text{Deficit})_{t-2}$	-0.24148***	0.131335	-1.83866
$d(\ln\text{RGDP})_t$	1.891155	1.447539	1.306462
$d(\ln\text{RGDP})_{t-1}$	1.898299	1.614528	1.175761
$d(\ln\text{RGDP})_{t-2}$	-0.109	1.331561	-0.08186
$d(\ln\text{REER})_t$	0.152378	0.126122	1.20818
$d(\ln\text{REER})_{t-1}$	0.271915***	0.131243	2.07185
$d(\ln\text{REER})_{t-2}$	0.253871***	0.1343	1.890329
$d(\ln\text{M2})_t$	1.966728*	0.431152	4.561561
$d(\ln\text{M2})_{t-1}$	0.023757	0.502071	0.047317
$d(\ln\text{M2})_{t-2}$	-0.45246	0.497386	-0.90968
$d(\ln\text{R})_t$	-0.40069*	0.107639	-3.72252
$d(\ln\text{R})_{t-1}$	-0.06289	0.103657	-0.60668
$d(\ln\text{R})_{t-2}$	-0.17978***	0.101705	-1.7677
DUM	2.099405*	0.294754	7.122569
ECT _{t-1}	-0.70108*	0.09553	-7.33888

R-Squared 0.839075

Diagnostics Test

	Statistics	Probability
Breusch-Godfrey Serial Correlation LM Test	2.23333	0.14978
Breusch-pagan-Godfrey Heteroskedasticity	1.300052	0.254638
Jarque-Bera Normal	0.14978	0.254638

R-squared

*, ** and *** represent significance levels at 1%, 5% and 10% respectively.

Source: Author's estimations using Eviews 10

Figure 1: CUSUM and CUSUM of squares plots.

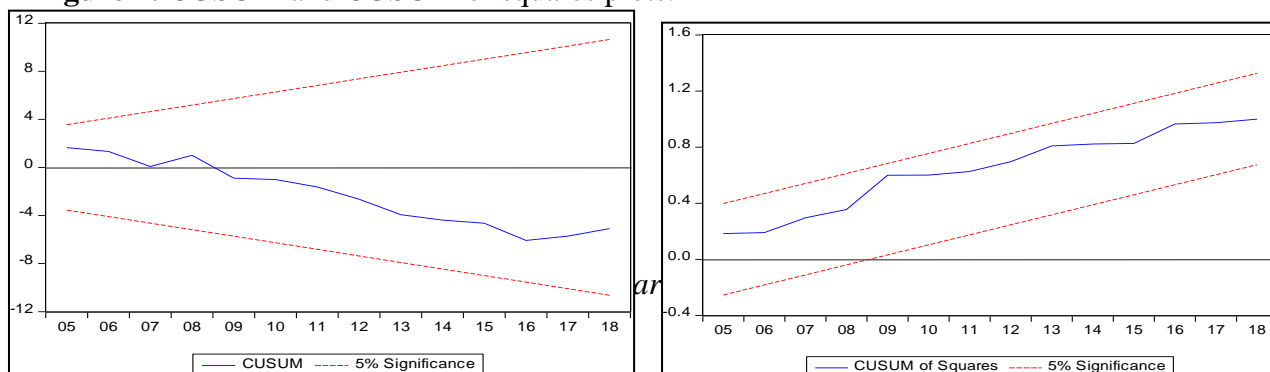


Table 4 presents the result of the short run estimation. The significance of an error correction term (ECT) provides the evidence of causality among the variables in at least one direction. The lagged error term (ECT_{t-1}) in the results is negative and significant at 1% level. The coefficient of -0.70108 indicates high speed of convergence to equilibrium. In other words, 78% of the deviation from the long run path of the variables is corrected each year. The implication of such finding is that non-oil trade deficit adjusts very quickly to restore any imbalances in its long run movement with the other variables.

From the result also some of the variables are significant in the short run, namely; first and second lagged values of the trade deficit and real effective exchange rate (REER), money supply (M2) and international reserve (R). Real income (RGDP) and all its lagged values do not have significant relationship with the trade deficit just as it was in the long run. Theoretically it does not follow the Keynesian income expenditure approach which assume that increase in the real income encourage importation which affects trade balance. Real effective exchange rate is also negatively related to the trade deficit, significant at 10% though. This further proves its consistent role in the Nigerian trade balance.

The result further shows that money supply positively affects the non-oil trade deficit in the short run as it turned out to be significant at 1% level. A fall in the money supply reduces the non-oil trade deficit. Duasa (2007) found similar relationship in the case of Malaysia. An international reserve is also significant at 1% level. The negative coefficient indicates that a fall the Nigerian reserve exacerbates (or increase) the non-oil trade deficit.

Conclusion and Policy Recommendations

Nigeria, like some other oil exporting countries, has sustained a deficit in the non-oil trade sector. Although there is theoretical contention on whether trade deficit is in the long run bad or good to an economy (see Griswold 1998 and Moon 2001) Nigeria trade policies are inclined towards improving the deficit most notably by promoting non-oil exports. The

renewed government efforts of protectionism to delist the importation of certain items and focus on agriculture after 2016 economic recession are some of the policies aimed at managing the gap in non-oil trade deficit.

This study therefore addresses the issue of Non-oil trade deficit in Nigeria by empirically examining some critical parameters that are found useful in other related studies. In particular, real income, real effective exchange rate, money supply and international reserves are put to empirical testing. The results indicate that real effective exchange rate is one of the major determinants of the non-oil trade deficit both in the long run and short run. Low exchange rate leads to low non-oil trade deficit.

Two other significant variables in the model are money supply and international reserves. As the results have shown, a contraction in the money supply leads to reduction in the non-oil trade deficit. International reserve is found to be negatively related to the non-oil trade deficit. A fall in the international reserve increases the non-oil trade deficit.

The findings therefore suggest that policy makers should prioritize controlling exchange rate, international reserve and money supply in managing the trade deficit in the non-oil sector. The impact of the monetary aggregates as a target for controlling inflation may play an important role in the domestic export capacity and consumption of foreign goods. The fact that real income does not appear to be a significant determinant of the non-oil trade deficit implies that the Keynesian view about the role of income in improving trade balance may not hold in the Nigerian context. This therefore calls for renewed attention by policy makers to look beyond the supply side policies and manage the non-oil trade balance from monetary perspectives. Furthermore, as the result shown a fall in reserve worsen the non-oil trade deficit; it calls for strategic plans to diversify the economy since Nigerian reserve is for the most part tied to the fluctuation in the international oil price.

The major take-away from the study is that Nigeria may benefit in managing its non-oil trade deficit by focusing on other variables such as money supply and international reserves, in addition to the exchange rate which has been receiving much attention.

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Determinants of Consumer Satisfaction with Global System for Mobile (GSM) service provider among GSM Users in Kano Metropolis, Kano State-Nigeria



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Abstract: *This study investigates the factors that influence consumer satisfaction in GSM market in Kano metropolitan. Using multi-stage sampling technique and Smith (2013) sample size formula, 192 questionnaires were distributed to customers of the four GSM service providers in the study area. One hundred and sixty questionnaires were filled and returned. Logit regression was used to find the relationship between the dependent variable, Customer satisfaction and independent variables, service quality, corporate image, price and promotion. Two factors corporate image and promotion were found to be statistically significant. The study recommends that there is a need for GSM service providers to give more emphasis to these factors (corporate image and promotion) when trying to attract more customers in the study area.*

Keywords: Consumer, Satisfaction, Global System for Mobile (GSM)

Introduction

In recent time, cellular phone has become part of people's life. You can hardly mention any sector of the economy that does not require the contribution of telecommunication services, be it education, commerce and industry, agriculture, health to mention few. The sector has facilitated communication between people who are living far away from each other, besides its contributions in dissemination of information and research. The market of cellular phone is expanding every day

The license of three mobile operators in Nigeria, MTN, MTEL and ECONET in 2001 opened a new era as far as the operation of telecommunication is concerned in the country. This came nine years after the establishment of Nigerian Communication Commission (NCC). The Nigerian government saw the need to establish this commission due to poor performance of NITEL which was the only telecommunication service provider then in the country. There was, also, the need to attract both domestic and foreign investors in to the sector. This inefficiency and poor performance of NITEL had resulted in the low teledensity of 0.04 per cent in the country which was considered one of the lowest in African Sub-Sahara (Adeleke & Abiodun, 2012). It is believed that the development of telecommunication infrastructure will significantly boost economic growth and development, this evidence that the sector contributed (N 1.549 trillion) to the Nigerian Gross Domestic Product (GDP) in the second quarter of 2017 representing 6.68% increase from the first quarter of the year (NGN1.452

trillion) as disclosed in September (Danbatta, 2017). In 2019 the sector's contribution to GDP was 10.3% while in the fourth quarter of 2020 it was claimed that it was one of the sectors whose performance lifted the country out of recession by contributing up to 12.45% to GDP (NCC, 2020)

NCC (2006) reported that the Nigerian GSM market is the fastest growing market in the world but at the same time, the industry has been lagging behind among other sectors in terms of customer satisfaction and loyalty. GSM services have been criticized over time for high tariffs, drop calls, call jamming, speech breakages, echoing of speech, delay or non-delivery of text messages after necessary charges have been deducted, inability to load recharge cards and general poor services (Consumer Protection Council, 2010).

With rapid increase in growth, the sector is characterized by intense competition among few GSM mobile operators who struggle to get more market share. In order to survive in this oligopolistic market each firm must determine the needs and wants of its customers and deliver products and services that satisfy these needs and wants more efficiently than its competitors (Opele, Afolabi & Onifade, 2018). Since Customer preferences are the subjective (individual) tastes, as measured by utility of various bundles of goods, preferences permit the consumer to rank these bundles of goods or services according to the level of utility they give the consumer. Consumers of telecommunication products and services in Nigeria are varied and their needs, tastes and expectations are also varied.

The objectives of this study are to investigate the factors that determine customer satisfaction with GSM service provider in Kano metropolitan, Kano state and to find out the relative importance of each factor in influencing customer satisfaction in the study area. This paper is divided into five parts; Introduction, literature review, methodology, Result, discussion and analysis and then conclusion and recommendations.

Literature Review

Conceptual Literature

Concept of Consumer Satisfaction

Satisfaction is a consumer's post-purchase evaluation and affective response to the overall product or service experience Oliver (1992). It is considered a strong predictor for behavioral variables such as repurchase intentions, word-of-mouth recommendations, or loyalty Eggert and Ulaga (2002). Schiffman and Kanuk (2007) defined satisfaction as a person's expression of pleasure or disappointment resulting from comparing a service outcome in relation to the expectations. If the performance falls below expectation, the customer is dissatisfied. If performance matches the expectations, the customer is satisfied. If the performance exceeds expectations, the customer is highly satisfied or delighted. Zeithaml et al. (1996) noted that when customers are satisfied, they tend to have favourable behaviour and remain with the current service provider but when they are dissatisfied; they exhibit unfavourable behavior and defect. Aminu and Hartini (2008) are of the opinion that customer satisfaction leads to loyalty, continuous patronage, positive word of mouth, recommendation, paying less attention to advertisements of competitors and ultimately increased market-share, profitability and customer retention.

Empirical Literature

Beginning with foreign literature, Hashed, Salniza and Hamid (2012) examined the determinants of customer satisfaction with Yemeni mobile provider. Correlation and multiple regression methods of analysis were used. The finding showed that received value, received quality and corporate image, have a significant positive influence on customer satisfaction, whereas customer expectation has positive but without statistical significant influence. Shahzad and Saima (2012) investigated the factors that can influence customer satisfaction in cellular industry in Peshawar region of Pakistan. Also, correlation and regression methods of analysis were used. The result revealed that price fairness, customer service and coverage are the major factors which can highly affect the customer satisfaction. Other factors are sale promotion, signal strength and promotion. Among these who used regression in their analysis to find factors responsible for customer satisfaction in the mobile telecommunication industry is Rahman (2014). His conclusion was that service innovativeness, service reliability, service competitiveness and service consistency have significant influence on making customer satisfied. Surprisingly as his finding showed, operator's network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value and operator contribution to society have insignificant influence in making customer satisfied at five per cent significance. Shahzad and Muhammed (2014) examined Determinants of customer satisfaction in cellular industry of Pakistan. They, also, found that tariff, quality of call and service offered a lot to the customer satisfaction.

Some researches in this area were conducted in Nigeria. Oghojafor, Ladipo, Ighomereho and Odunewu (2014) investigated "Determinants of Customer Satisfaction and Loyalty in the Nigerian Telecommunication industry" using regression method of analysis. The finding showed that product (core service), price, distribution, promotion and customer service are the key factors affecting customer satisfaction and loyalty. Sulaimon, Hammed, and Olanrewaju, (2016) used correlation and regression in their study "Determinants of Customer Preference and Satisfaction with Nigerian mobile Telecommunication Service" their result revealed that majority of the respondents were influenced by service quality, promotional activities, price/billing and customer care service. Lastly, Opele, Afolabi and Onifade (2018) in their study "Consumer Preference and Satisfaction of GSM service Providers among Students of Tertiary Institution in Lagos State" found a significant positive relationship between service assurance, service empathy, service reliability service responsiveness and customer satisfaction of GSM service provision among the students of tertiary institution in Lagos state.

This research differs from previous similar researches in terms of the area where the study was conducted. To the best of the researcher's knowledge there has not been any similar study conducted in Kano state. By estimation, 95% of the people of Kano state are Hausas and Muslim by religion. The way they behave and react to certain business activities may be different from people in places like Benue, Plateau, Kaduna, etc. Therefore, factors that determine customer satisfaction among GSM users in Kano state may be different with the ones found in either Northwestern Nigeria or in Nigeria in general.

Theoretical Framework

Consumer behaviour & consumer decision making

"Consumer behaviour..... is the study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs and desires." (Solomon, Bamossy et al. 2006).

Consumer decision making has long been of interest to researchers. Beginning about 300 years ago, early economists led by Nicholas Bernoulli, John von Neumann and Oskar Morgenstern, started to examine the basis of consumer decision making (Richarme, 2007). This early work approached the topic from an economic perspective, and focused solely on the act of purchase (Loudon & Della Bitta 1993). The most prevalent model from this perspective is 'Utility Theory' which proposes that consumers make choices based on the expected outcomes of their decisions. Consumers are viewed as rational decision makers who are only concerned with self-interest (Schiffman & Kanuk 2007, Zinkhan 1992). The utility theory views the consumer as a 'rational economic man'.

In order to behave rationally in the economic sense, as this approach suggests, a consumer would have to be aware of all the available consumption options, be capable of correctly rating each alternative and be available to select the optimum course of action (Schiffman & Kanuk 2007).

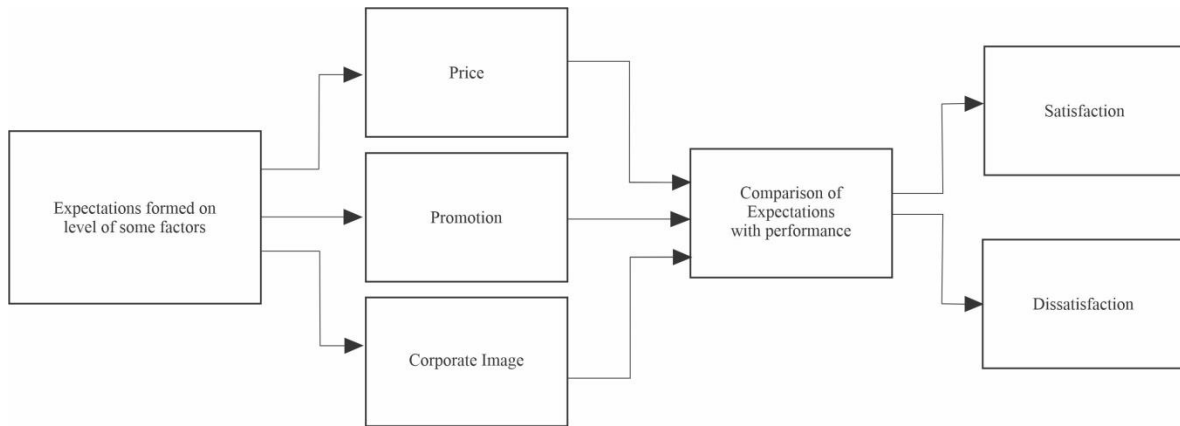
The company that really understands how consumers will respond to different product features, prices and advertising appeals has a great advantage over its competitors (Kotler & Armstrong, 2001). It is therefore important for every company to study consumers and establish what determines the choices of products they make.

The Expectancy Disconfirmation Paradigm of Consumer Satisfaction

Oliver (1977; 1980) proposed the Expectancy-Disconfirmation Paradigm (EDP) as the most promising theoretical framework for the assessment of customer satisfaction. The model implies that consumers purchase goods and services with pre-purchase expectations about the anticipated performance. The expectation level then becomes a standard against which the product is judged. That is, once the product or service has been used, outcomes are compared against expectations. If the outcome matches the expectation confirmation occurs.

Disconfirmation occurs where there is a difference between expectations and outcomes. A customer is either satisfied or dissatisfied as a result of positive or negative difference between expectations and perceptions. Thus, when service performance is better than what the customer had initially expected, there is a positive disconfirmation between expectations and performance which results in satisfaction, while when service performance is as expected, there is a confirmation between expectations and perceptions which results in satisfaction. In contrast, when service performance is not as good as what the customer expected, there is a negative disconfirmation between expectations and perceptions which causes dissatisfaction.

Going by this theory, In GSM market, service provider companies try as much as they can in order to meet the expectations of their customers. This is because customers can only be loyal when they are satisfied with the performance of the company otherwise, they can easily switch to another service provider. Empirical studies proved that factors like price, service quality, corporate image and promotion determine customer satisfaction. Consumers form expectation about the level of these factors in their GSM service providers and compare them with the performance of the service providers. The result of comparison leads to either satisfaction or dissatisfaction of the consumer



Source: Author

Methodology

This section contains the population of the study, sample size, sampling techniques, and research instrument and model specification.

Population

The population of the study involves all the users of GSM mobile phones in Kano metropolitan. Kano metropolitan consists of eight local governments which are Municipal, Dala, Gwale, Tarauni, Nasarawa, Fagge, Kumbotso and Ungwaggo. Kano metropolitan is the heart of Kano state in terms of population, economic as well as educational activities. Because of these feature it possesses, it has become a center of attraction to almost all the business firms and industries not only those located in the state, but in the country at large.

Sample Size and Sampling Techniques

The study used Smith (2013) sample size formula to determine the total sample size. The formula is given as:

$$n = (Z_{score})^2 \times stand. Dev. (1 - stand. Dev.) / (margin of error)^2. \text{ Where}$$

n = sample size

stand. Dev. = standard deviation

Smith suggested this formula when the population size is large or unknown. He also suggested the use of .5 for unknown standard deviation. Taking 95 % confidence level and 10% margin error, we can calculate sample size as:

$$n = (1.96)^2 \times 0.5(1 - 0.5) / (0.1)^2 \qquad n = 96.04$$

However, for the purpose of data collection for this study, 192 questionnaires were distributed instead of the predetermined sample number of 96 to avoid the problem of the non-response rate. According to Watson (2001), since it is not every selected sample that will likely respond, there is a need for the researcher to increase the sample size to avoid non-response bias. Watson (1998) argued that at least a 50 percent rate of response is necessary for reporting and analysis.

Multi-stage sampling technique was used in the study. The study area contains eight local governments and each local government contains some wards. In the first stage cluster sampling technique was used to select three wards from each local government and then in

the second stage eight GSM mobile users were systematically selected from each of the selected wards making a total of 192 GSM users.

Source of Data and Method of Data Analysis

The data was sourced from a structured questionnaire which contains two parts. Part A contains bio-data of the respondents, the telecommunication service provider used and the number of years the user has been loyal to a particular GSM service provider. Part B contains research questions. A likert scale was used with 5-point allocated to strongly agree, 4-point to agree, 3-point to neutral, 2-point to disagree and 1-point to strongly disagree. 160 questionnaires were filled and returned translating to 83 percent response rate.

Cronbach Alpha was used to determine the internal consistency and reability of the items. The result obtained was under acceptable range of $\alpha \geq 0.7$. According to Nunnaly (1978) and Pallant (2004) reability score greater than 0.7 is acceptable. Logistic regression model was used to analyze the result using Stata statistical package.

A logistic model is used when the dependent variable in a regression is binary (0 and 1) and which ensures that the estimated probabilities are bounded by 0 and 1. In this approach the dependent variable must be categorical variable while the independent variable can either be categorical or continuous. The logit is the natural (Ln) of odd of y, and odds are ratios of probabilities(p_i) of y happening to probabilities (1 - P_i) of y not happening.

The logistic function F which is a function of any random variables Z would be

$$F(Z_i) = \frac{e^{z_i}}{1 + e^{z_i}} = \frac{1}{1 + e^{-z_i}} \dots\dots\dots(i)$$

where e is the exponential under the logit approach. So the logistic model estimated would be

$$P_i = \frac{1}{1 + e^{-(\beta_1 + \beta_2 x_{2i} + \dots + \beta_k x_{ki} + u_i)}} \dots\dots\dots(ii)$$

Where again P_i is the probability that $y_i = 1$

Empirically

$P_i = F(Z_i)$ where F represents the (non-linear) logistic function

$$Z = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + u \dots \dots \dots (iii)$$

β_0 = intercept

β_1 =slope of service quality

β_2 = slope of price

β_3 = slope of corporate image

β_4 =slope of promotion

u = error term

The Variables are measured using A likert scale with 5-point allocated to strongly agree, 4-point to agree, 3-point to neutral, 2-point to disagree and 1-point to strongly disagree as shown below

Table 1: Measurement of Variables
Source: Formed from Questionnaire

variable	Description	1	2	3	4	5
Satisfaction	Overall iam satisfied with my GSM service provider					
Service Quality	Call clarty on my network is high and internet service is efficient					
Price	The service price/tariff policies of this operator are attractive					
Corporate image	I consider that this operator’s reputation is high					
Promotion	The promotion offers from my service operator is attractive to me					

Data Analysis

Consistency of the Research Instrument

The Cronbarch’s Alpha is used to measure the internal reliability or consistency of the research questionnaire. It measures how well a test measures what it should. The range of Cronbarch’s Alpha lies between 0 and 1. The higher the value the Cronbarch’s Alpha, the higher the reliability of the instrument.

Table2: Cronbarch’s Alpha

Variable	No of item	Alpha coefficient
Customer Satisfaction	3	0.70
Service Quality	5	0.68
Price	3	0.67
Customer Service Care	2	0.67
Corporate Image	3	0.65
Promotion/Advertisement	3	0.62
Test Scale		0.71

Source: Researcher computation

Table 3, shows Cronbarch’s Alpha of 6 constructs of the questionnaire, satisfaction has highest Alpha value of 0.7, followed by service quality of 0.68, followed by price and customer service care each has 0.67, corporate image has 0.65 and lastly promotion/advertisement has lowest Alpha value of 0.62. All the items have good reliability, because the overall cronbarch’s Alpha value is 0.71 which is above the minimum.

Table 3: Analysis of Respondents’ Demography

Variable	Freq	Percentage	Variable	Freq	Percentag e
Gender			Occupation		
Male	111	69.4	C/P servant	53	33.1
Female	49	30.6	p. com employee	15	9.4
Total	160	100	Self employed	60	37.5
Age			Student/unemployed	32	20.0
18-30 years	77	48.1	Total	160	100
31-40 years	45	28.1	Gsm network used		
41-60 years	34	21.2	MTN	85	53.1
61- above yrs	4	2.5	GLO	24	15
Total	160	100	Airtel	38	23.8
Qualification			9-mobil	13	8.1
No Formal Education	23	14.4	Total	160	100
O-level/ND/NCE	81	50.6	No. of years on the network		
HND/Bsc/BA	39	24.4	0-2 years	28	17.5
Postgraduate Qualificatio	17	10.6	3-5 years	46	28.8

Total	160	100	6-9 years	35	21.9
Marital status			10-above years	51	31.9
Married	84	52.5	Total	160	100
Single	65	40.6			
Divorced	5	3.1			
Widow/widower	6	3.8			
Total	160	100			

Source: Generated by researcher using questionnaire

From table 2, we can see that, out of 160 respondents, majority of them 111(69.4%) were male while only 49(30.6%) were female. This was due to the fact that ladies in the area of study are so shy. They do not want to respond to questions to strangers. Many of the contacted ladies refused to fill the questionnaires given to them. The age of the respondents shows that 77(48.1%) are young within the age of 18-30 years, 45(28.1%) are within the age of 31-40 years, 34(21.2%) are within the age of 41-60 years and only 4(2.5%) are old within the age of 61 to above. It is common to all societies that young people own and use GSM mobile phone more than old people. Old people do not normally welcome new innovation they sometime fight it. Educational qualification of the respondents show that 23(14.4%) of them did not go to school. 81(50.6%) of them had one of o-level certificate, ND or NCE certificate as their highest qualification, 39(24.4%) had either HND or BSC/BA as their highest qualification only 17(10.6%) have postgraduate certificate. It is not something surprising that 85.6% of the respondents in the area went to school because it is the Centre of the state. Most of the people in the area know the value of education. They, therefore, enroll their children to school in appropriate time. Majority of the respondents, 84(52.5%) are married, 5(3.1%) are divorced, 65(40.6%) were single and 6(3.8%) are either widow or widower. About the occupation of the respondents, the table shows that 53(33.1%) are either civil servants or public servants, 15(9.4%) are private company employees, 60(37.5%) are self-employed and 32(20%) are either students or unemployed. The table shows that MTN had highest number of subscribers, 85(53.1%) among the respondents. This occurred due to the fact that MTN came before others and since the time that the company came to Nigeria it has not changed its name. MTN was followed by Airtel with 38(23.8%) subscribers among the respondents. GLO had 24(15%) and lastly 9-mobile had 13(8.1). Lastly, the table shows that 51(31.9%) of the respondents have been loyal to one GSM service provider for more than ten years despite different advertisement/promotions and other techniques employed by different GSM service providers to draw customers. Those who have been to one service provider between 3-5 years were 46(28.8%). Those who are between 6-9 years were 35(21.9%) and those who are between 0-2 years were 28(17.5%).

Table4: Logit Regression (Odd Ratios)
Dependant Variable: Customer Satisfaction

Variable	Odd Ratio	Std. ERR	Z	P>Z	95% Con. Interval
Sq	1.148438	0.180619	0.88	0.379	0.843793 1.563072
Price	1.066471	0.1798195	0.38	0.703	0.7663489 1.484129
CI	1.601128	0.2898181	2.60	0.009	1.122926 2.282973
Pro-Adv	1.363687	0.2210103	1.91	0.056	0.992572 1.873559
Cons	0.0999948	0.0669472	-3.44	0.001	0.0269211 0.3714177

The result in table 3 shows that all the regressors are positive, two are statistically significant- corporate image and promotion, while the other two are statistically insignificant- service

quality and price. From table 3 we can see that if corporate image increases by one unit, odd ratio in favour of customer satisfaction increases by 1.601128. Also, if promotion and advertisement increase by one unit, odd ratio infavour of customer satisfaction increases by 1.363687.

Table5: Logit Regression (Coefficient)
Dependant Variable: Customer Satisfaction

Variable	Coefficient	Std. ERR	Z	P>Z	95% Con. Interval
Sq	0.1384027	0.1572737	0.88	0.379	-0.169848 - 0.4466534
Price	0.643551	0.1686117	0.38	0.703	-0.2661178 0.3948281
CI	0.4707081	0.1810088	2.60	0.009	0.1159374 0.8254788
Pro-Adv	0.3101921	0.1620682	1.91	0.056	-0.0074557 0.627839
Cons	-2.302637	0.6695069	-3.44	0.001	-3.614847 -0.9904279

Source: Researcher computation

The result in table 4 shows that, the coefficient of service quality is positive indicating that when service quality of the GSM service provider increases by one unit the probability of customer being satisfied increases by 0.1384 though the coefficient is statistically insignificant even at 10%. The same thing with price, the coefficient is positively related to the probability of customer satisfaction but it is statistically insignificant. The corporate image of the service provider and promotion and advertisement has positive coefficients and they are statistically significant. The result shows that if corporate image of the service provider increases by one unit the probability that customer is satisfied increases by 0.4707. And also, when the service provider increases promotion and advertisement by a unit the probability that customer is satisfied increases by 0.3012

Conclusion and Recommendations

The finding shows that good corporate image is a strong factor of satisfying GSM customers in the study area. This finding is in line with Hashid, Salniza and Hamid (2012) who found that corporate image is one of the factors that affect customer satisfaction in Yemen. Also, the result shows that promotion and advertisement have influence on customer satisfaction. The finding is in line with many researches some of which are Oghojafor, Ladipo, Ighomereho and Odunewa (2014) and Shahzad and Saima (2012). Contrary to many, findings, service quality and price did not show significant influence on customer satisfaction in the study area

There is a need for GSM service providers to give more emphasis to these factors of Corporate image and promotion when trying to attract more customers in the study area.

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Role of ICT on Entrepreneurship Development in Jos and Environs, Plateau State, Nigeria



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Abstract: *Information and communication technology (ICT) has contributed in linking the entire world through internet connectivity. Investment in ICT will therefore enhance entrepreneurial business development thereby reducing the high unemployment rate among Nigerian graduates. Entrepreneurial business has gained increased prominence and importance as key factor in job creation, economic growth and development. ICT has improved communication and promote efficiency in business among entrepreneurs. The study sought to establish ICT role on entrepreneurial business development in Jos and environs, Plateau State, Nigeria. Correlational survey design method was used for the study. The study population comprised of the following categories of businesses: manufacturing, services businesses, printing and business centres in Jos and environs. A sample of 250 business owners was selected through purposive and stratified random sampling. The study used Pearson correlation analysis in analyzing the data. The findings revealed that ICT role of virtual and efficient business coordination influences entrepreneurial business development. Also ICT helps in searching for market for entrepreneurial businesses. The findings further revealed that ICT role of advertising and marketing communication has influences entrepreneurial business development in Jos and environs. The study concluded among others that ICT plays significant roles in entrepreneurial business development through: provision of virtual and efficient business coordination, provision of access to markets, reaching the customers through advertisement and marketing communication of entrepreneurial products. The study recommends that government should provide an enabling environment and necessary infrastructures for smooth operation of ICT and entrepreneurial business; there is need for entrepreneurs to acquire and use ICT tools as it will help in making their business efficient.*

Keywords: Business, entrepreneurial, development, information and communication technology

Introduction

Nigerian economy is blessed with enormous natural resources but has yet remained underdeveloped. The country could not harness the abundant human natural resources to build a sound and virile economy and sustained it through the use technology. The world has become one global entity through information and communication technology (ICT) connectivity using its different tools. With application of ICT by entrepreneurs, businesses will prosper through transfer of knowledge through communication. In Nigeria young people graduate from school and hardly do they secure a job, despite their education, qualification

and willingness to put in their best effort. According to Undiyaudaye and Otu (2015) about 80 per cent of graduates in most Nigerian universities find it difficult to secure employment each year. This has resulted in a large number of poor people. According to Ahiuna-Young (2012) the poverty rate in Nigeria has been rising with almost 100 million people living on less than \$1 a day and the growing wave of unemployment has led to a large reservoir of idle hands that are ready for immediate hire or deployment for any socio – political reprisal. However, entrepreneurial business has gained increased prominence and importance as key factor in job creation, economic growth and development in developed countries of the world. It has contributed in wealth creation, fight poverty, diseases, hunger and other real dangers associated with underdevelopment.

Entrepreneurship has become an aspect that promotes economic success, steadiness and wealth. Entrepreneurship has contributed in reducing the level of unemployment and promotes employment opportunities in Nigeria. According to Nongo (2018) entrepreneurship has contributed to economic development through generation of employment opportunities, production of high quality goods and services and provision of skills for management of business enterprises among others. Entrepreneurship increases societal wealth and empowers the poor and vulnerable if they seek investment opportunities and establish an enterprise based on identified opportunities. This will certainly reduce the number of people in poverty. In Nigeria, entrepreneurial businesses have played dismal roles. According to Olawale (2018) entrepreneurs have failed due to lack of application of modern technology in business, lack of customer care, personal growth, poor location and poor state of infrastructure among others. Information and communication technology (ICT) which is an electronic technology used for information storage and retrieval has the ability of creating, saving and forwarding data and information plays significant role in the economy. Information and communication technology enhances entrepreneurial business opportunities growth, especially among entrepreneurs whose enterprises are located far from urban centres. Transaction of business through cashless means was made possible through ICT as Nigerians now use digital payment methods either through mobile payments, point of service (POS) and internet transactions with less emphasis on cheque transactions. According to Oladimeji (2018) ICT has reduced transaction costs, thus improving productivity; it has substituted for other more expensive means of communicating and transactions such as physical travel. Information and communication technology has also widened the geographic scope of potential markets and making more sales thereby providing entrepreneurs with more funds to produce more goods.

Purpose of the Study

The purpose of the study is to establish ICT role in entrepreneurial business development in Jos and environs, Plateau State, Nigeria. The paper sought to:

1. Determine ICT virtual and efficient business coordination role and entrepreneurial business development in Jos and environs.
2. Examine ICT role of access to markets and entrepreneurial business development in Jos and environs.
3. Determine ICT advertising and marketing communication role and entrepreneurial business development in Jos and environs.
4. Determine time saving role of ICT in entrepreneurial business development in Jos and environs.

Literature Review

Information and Communication Technology (ICT)

Information and communication technology includes different kinds of technology used for manipulation of data or information such as machine and software equipment for data transfer and maintenance. According to Forhadi, Ismail and Fooladi (2012) ICT include computers and other information equipment as well as computer software, which covers computers, peripheral equipment and other information related to office equipment. Contributing, Ashikuzzaman (2014) posited that ICT means a variety of technological applications in the process and communication of information. It is a combination of two words information communication and technology. Information means knowledge and technology means the use of computer and communication. Similarly, Techterms (2010) opined that ICT is an umbrella term that includes all communication device or application encompassing: radio, television, cellular phones, computer and network hardware's and software's, satellite system among others as well as various services and applications associated with them such as video conferencing and distance learning. Information and communication technology therefore could be the integration of computing, networking and data processing using technologies and its various applications to bring an output. ICT therefore means the use and application of machines and different tools in communication and production of goods and services.

Entrepreneur/Entrepreneurship

An entrepreneur is someone who takes risk of venturing into production of new product where others have fail is where he will venture in. Dabo and Gukas (2016) posited that an entrepreneur can be described as an inventor or developer who recognizes and explores opportunities to bring out results that are workable. Similarly, Singh and Sharma (2011) opined that an entrepreneur is someone who takes risks by venturing into business through planning, organizing and coordinating the use of materials and money to make profit through the production of goods or rendering services. Contributing, Hisrich, Peters and Sherpherd (2008) posited that an entrepreneur is someone who creates something new or valuable by devoting the necessary time and effort, assuming financial, psychic and social risks and by receives rewards in form of monetary and personal satisfaction and independence. An entrepreneur therefore, could be someone who is not satisfied with the present condition of events he/she is thinking of creative ideas, seeking, willing and ready to convert the new ideas into reality or successful innovation.

Entrepreneurship on the other hand have to do with self – reliance such as creating a new culture and productive environment, promoting new set of attitudes and culture for the attainment of future challenges. According to Odu (2009) entrepreneurship could be seen as a process of identifying an opportunity related to needs – satisfaction and converting it to a thing of value. Contributing, Anho (2014) posited that entrepreneurship involves innovation, creative thinking, risk – taking, determination, being resourceful, exhibiting financial control and being flexible in decision making among others. It is a process driven by the desire to innovate, through production of new things that is goods and services or improving on existing ones. Entrepreneurship therefore is the process of increasing the supply of entrepreneurs or adding value to the available ones by creating and promoting many capable entrepreneurs who can successfully run innovative enterprises, nurture them to grow and sustain them with a view of achieving broad socio – economic goals.

Information and Communication Technology Role in Entrepreneurial Business Development

In developing countries entrepreneurial business development has been hindered by continued use of primitive technologies which usually affects output of the ventures. However, the use of ICT in entrepreneurial business development drives innovation which is the right path to business success. According to Ashikuzzaman (2014) ICT usage leads to effectiveness and results in fewer errors, make the business most interactive, personalized, transparent and acceptable. The use of ICT is also efficient, faster, and less paper work and it leads to innovation of new products and new technologies. There are several contributions of ICT in entrepreneurial business development among which are:

- i. **Access to Markets:** Information and communication technology has led to e – commerce which has greatly minimized the need for physical infrastructure for trade to take place. According to Mwangi (2016) platform like Jumia give entrepreneurs access to market in all parts of the country and all over the world. Contributing, Ramli, Samah, Hassan, Omar, Bolang and Shaffri (2015) posited that ICT has been an effective solution among businesses and entrepreneurs to problems such as weak marketing leakages, poor information management, low productivity and low income among others.
- ii. **Virtual and Efficient Business Coordination:** In today’s world modern technology has brought revolution in the way businesses are been carried. Entrepreneurial business world over make use of applications (apps) and most times do not need to meet physically to transact business and the transactions has run successfully. According to Nwaokolo (2015) a good example is the use of uber taxi, easy taxi, which are effectively carried online very efficient and convenient. Contributing, Linton (2018) posited that ICT systems help entrepreneurial business in reducing cost of business, increase efficiency, improve decision making and increase competitiveness in the market place. Information and communication technology allow entrepreneurial businesses to store, process, analyze and share vast amount of data. This allows entrepreneurs and employees to take quick decisions and accurately manage operations effectively and respond rapidly to business opportunities and threats.
- iii. **Advertising and Marketing Communication:** Technology development through ICT has reduced business cost for entrepreneurs. Gone are the days when entrepreneurs have to travel far to reach the customers and advertise their products. Contributing, Nuamah-Gyambrah, Otu and Agyeiwaa (nd) posited that ICT helps to promote easy and fast communication between clients and business partners and it keeps customers in close touch. Today ICT has made it easy and cheaper as the entrepreneur just needs to create a website or even send messages via tweet on twitter, or post on Facebook or send videos on YouTube at a relatively cheaper rates and it will reach a wider range of people. According to Ryan (2011) with ICT tools now the entrepreneur aimed are expanding and improve efficiency to customers as the internet is used to advertise products. In those days the entrepreneurs needs to pay money for advertisement either through radio, television, newspaper or physical promotion of the product.
- iv. **Saving Time and increasing Revenue streams:** Modern ICT tools can decrease costs as well as increase productivity and effectiveness on the level of individuals and organization. According to Hosseini, Lashgaara and Hosseini (2014) ICT can

reduce costs and time consuming and have bureaucratic system removal with itself and with creating changes in organizations, creating diversity, provide sufficient incentive for entrepreneurial activities and bring coordination necessary for organizations and individuals with the changes in communities. Mwangi (2016) opined that with ICT entrepreneurs could organized teleconferencing where important meetings are held via videos conferencing technology systems which allow two or more locations to communicate via simultaneous two way audio transmissions, eliminating the logistic of travelling, saving time and money. Contributing, Linton (2018) posited that using videoconferencing to host meetings between members in different locations, ICT help entrepreneurs and organizations reduce costs, increase revenue and improve profitability as the cost of travel is also reduced.

Empirical Review

Olasanmi, Ayoola and Kareem-Ojo (2012) carried a study on the use of ICT among women entrepreneurs in the garment industry in Ibadan North Local Government Area of Oyo State in South – Western Nigeria. The findings revealed that women entrepreneurs underutilize ICT infrastructure and systems in the production and marketing of garments. The findings further showed that most of the women producers in the garment industry lack computer literacy, whereas this is a basic factor that is required to the application of advanced procedures in garment production. Akande (2015) investigated the influence of information technology (IT) on entrepreneurial operation performance in 20 Local Council Development Areas of Lagos State, Nigeria. The findings revealed that information technology has positive influence on entrepreneurial operation as IT helps in reducing the likely errors that would have been made in reporting business transactions; it also helps managers to monitor the work of their subordinates without them knowing.

Similarly, Maramura and Shava (2016) carried a study in the Mhondoro district of Zimbabwe. The study adopted a qualitative research approach based on a document study review to establish how rural entrepreneurs have been using ICTs for rural development in the district. The findings revealed that there are policy issues inhibiting the advancement of ICTs. Information technology was categorized into regulatory or political legislation, poor infrastructural development and financial instability among rural entrepreneurs, social and political perceptions and poor monitoring and evaluation of ICT projects in rural communities were the identified findings.

Methodology

Research Design

The study used correlational survey design as its guide. The population of study consists of all business enterprises comprising of manufacturing, services businesses, printing and business centres in Jos and environs, Plateau State, Nigeria.

Population and Sample

The population for this study comprised of all business enterprises in the following categories: manufacturing, services businesses, printing and business centres in Jos and environs, Plateau State, Nigeria. However, a sample of 250 business owners was selected and used for data collection and the findings from the sample size shall be used for generalization purposes.

Sampling Technique

The study used purposive and stratified random sampling in selecting the sample study. Purposive sampling was used because the study was carried with a pre - determined purpose in mind, while stratified random sampling technique was used based on the fact that the different business sectors of manufacturing, services businesses, printing and business centres served as a stratum so that there is equal representation of the population in the sample.

Instrument for Data Collection

The study used structured questionnaire tagged as Information and Communication Technology Role in Entrepreneurial Business Development Questionnaire (ICTREBDQ). A four point Likert scale was provided for the respondents to score as follows: strongly agree = 4, agree = 3, disagree = 2, strongly disagree = 1.

Results and Discussion

Results

The results of the study are presented and analyzed based on the 220 questionnaires that were duly filled and returned. The results of the study are presented using Pearson correlation from the research questions.

Question 1: To what extent does ICT virtual and efficient business coordination plays a role in entrepreneurial business development? Virtual is a digitally replicated version of the real situation in which ICT uses, while efficient business means getting the task of business completed, ICT makes business to be effective through virtual technique.

Table 1: ICT Virtual and Efficient Business Coordination and Entrepreneurial Business Development.

		ICT virtual business Coordination	Entrepreneurial Development
ICT Virtual Business Coordination	Pearson Correlation	1	-.690**
	Sig. (2-tailed)		.000
	N	220	220
Entrepreneurial Development	Pearson Correlation	-.690**	1
	Sig. (2-tailed)	.000	
	N	220	220

** Correlation is significant at the 0.01 level (2-tailed)

Source: Author’s computation using SPSS version 20, 2020

The result of correlation analysis indicated that ICT virtual business coordination had a strong negative and significant correlation with entrepreneurial business development in Jos and environs, Plateau State, Nigeria ($r = -0.690, p = 0.000$). The findings imply that increase in entrepreneurial business development results in decrease in ICT virtual business coordination and a decrease in entrepreneurial business development would lead to increase in ICT role of virtual business coordination among entrepreneurs in the study area. The $p = 0.000 < 0.05$ signifies a statistically significant relationship between ICT role of virtual business coordination and entrepreneurial business development in Jos and environs. This finding is in line with Nwaokolo (2015) who posited that ICT has made business transaction to be efficient and convenient as the case of uber taxi where business is carried without physical contact. Similarly, Linton (2018) opined that ICT systems help entrepreneurial business in cost reduction, increase efficiency and decision making, since information could be stored, processed, analyzed and shared to business partners and clients at different locations about the same time.

Question 2: How does ICT role of access to markets influence entrepreneurial business development?

Table 2: ICT providing Access to Markets and Entrepreneurial Business Development

		ICT Access to market	Entrepreneurial Development
ICT Access to Market	Pearson Correlation	1	.655**
	Sig. (2-tailed)		.000
	N	220	220
Entrepreneurial Development	Pearson Correlation	.655**	1
	Sig. (2-tailed)	.000	
	N	220	220

** Correlation is significant at the 0.01 level (2-tailed)

Source: Author's computation using SPSS version 20, 2020

The result of correlation analysis showed that ICT role of providing access to market had a strong positive and significant correlation with entrepreneurial business development in Jos and environs, Plateau State, Nigeria, hence ($r = 0.655$, and $p = 0.000 < 0.05$). The findings implied that increase in access to market also leads to increases in entrepreneurial business development and similarly, increase in entrepreneurial business development results to increase in the search for access to markets. The findings concur with Mwangi (2016).

Question 3: How does ICT role of advertising and marketing communication influence entrepreneurial business development?

Table 3: ICT role of Advertising and Marketing Communication and Entrepreneurial Business Development

		ICT Advertising and Marketing/Comm	Entrepreneurial Development
ICT Advertising Marketing/Comm	Pearson Correlation	1	-.516**
	Sig. (2-tailed)		.000
	N	220	220
Entrepreneurial Development	Pearson Correlation	-.516**	1
	Sig. (2-tailed)	.000	
	N	220	220

** Correlation is significant at the 0.01 level (2-tailed)

Source: Author's computation using SPSS version 20, 2020

The correlation analysis indicated that ICT role of advertising marketing communication had a strong negative and significant correlation with entrepreneurial business development in Jos and environs, Plateau State, Nigeria ($r = -0.516$, $p = 0.000 < 0.05$). The findings imply that increase in entrepreneurial business development results in decrease in advertising marketing communication roles of ICT, and similarly, decrease in entrepreneurial business development leads to increase in ICT role of advertising marketing communication to attract more customers. This finding is in line with Ryan (2011).

Question 4: To what extent does ICT role of time saving/increase revenue plays significant role in entrepreneurial business development?

Table 4: ICT role of Time saving/Revenue increase and Entrepreneurial Business Development

		ICT Time saving and Revenue increase	Entrepreneurial Development
ICT Time saving	Pearson Correlation	1	-.534**
Revenue increase	Sig. (2-tailed)		.000
	N	220	220
Entrepreneurial Development	Pearson Correlation	-.534**	1
	Sig. (2-tailed)	.000	
	N	220	220

** Correlation is significant at the 0.01 level (2-tailed)

Source: Author’s computation using SPSS version 20, 2020

The result of correlation analysis showed that ICT role of time saving/revenue increase had a strong negative and significant correlation with entrepreneurial business development in Jos and environs, Plateau State, Nigeria ($r = -0.534, p = 0.000 < 0.05$). The findings implied that increase in entrepreneurial business development result in decrease role of ICT in time saving and revenue increase as the business enterprise might have been established and stable. Similarly, a decrease in entrepreneurial business development leads to increase role of ICT in time saving/revenue increase among entrepreneurial businesses as ICT would be required to reach more customers thus saving time and increasing revenue. This finding concurs with Hosseini, Lashgaara and Hosseini (2014).

Conclusion

Entrepreneurial business development serves as remedy for employment creation and poverty reduction. The study from the findings concluded that ICT virtual and efficient business coordination plays important role in entrepreneurial business development. Likewise ICT plays role in providing access to market for entrepreneurial business in Jos and environs. The study also concluded that ICT role of advertising and marketing communication influences entrepreneurial business development as it provides an avenue for the products to reach a wide range of the people in the world through ICT tools. Similarly, it was concluded that ICT plays role of time saving/increase revenue for entrepreneurs as ICT tools used saves the entrepreneurs the cost of travelling to meet the customers, thereby saving time and increasing revenue for the entrepreneurs.

Recommendations

Based on the conclusion of the findings, the following recommendations are drawn:

1. Government should provide an enabling environment and infrastructural facilities needed for smooth operation of ICT and entrepreneurial business. There is need for adequate power supply, good network for internet connectivity and extension of capital to entrepreneurs to encourage more people to enroll in entrepreneurial business.
2. Information and communication technology tools should be adequately provided and made functional by the government/body responsible so that entrepreneurs can subscribed and use it to reach a wide range of the public in showcasing their products and talents.
3. There is need for entrepreneurs to acquire and use ICT modern tools in promoting their business. Making use of ICT tools will enable effective communication and interaction between entrepreneurs and their customers.

4. Entrepreneurs need to make use of ICT tools as it will save them time and cost of travelling to market and advertise their products, With ICT they do not need to meet physically with their customers to advertise their products, yet the receive immediate feedback from customers.

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A Beginners Review of Jamovi Statistical Software for Economic Research



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Abstract: *This article introduces basic features of a free and open-source software jamovi. The study provided an on the installation of the jamovi software and its computational and analysis features. Step-by-step explanation was provided on descriptive statistics which included measures of central tendency (mean, mode and median) and the measures of variability (range, variance, and standard deviation). The jAMOVI software was found to be simple, flexible, and easy to learn with very sophisticated analytical capacity. jAMOVI is highly recommended for users of R, SPSS, or SAS as they will find the interface user-friendly. jAMOVI is also ideal for individuals that analyze data sporadically as they do not have to code for simple tasks.*

Keywords: Descriptive statistics; Economic research; Free statistical software; jAMOVI

Introduction

Social science research would require collection and analysis of data, hence the need for use of quality software packages. Globally, Statistical Package for Social Sciences (SPSS) Statistics program was the most preferred software in academic studies in 2018. The R – program is equally gaining wide acceptability amongst researchers and it has been referenced half as much as SPSS in academic articles (Sahin & Aybek., 2019.). Jamovi is a sophisticated front end for R programme language (Navarro & Foxcroft, 2019). Barchard, Helm, & Watt, (2021) in their series of assignments on jamovi have demonstrated that the software can be learned independently and is versatile to meet the rigors of graduate-level research.

The jamovi project was found to develop a free, open, and neutral statistical platform. It is compatible with several Operating Systems (OS); Windows Vista (64-bit) and above, macOS 10.9+ , Linux and Chrome OS. The jamovi software is freely available for any use (jamovi, 2021). Jamovi simplifies using the R program and offers a point-and-click graphical user interface (4stats.com, 2021).

The motivation for using jamovi is because the software is free, standalone and opensource. It has advantages of powerful analytics capacity of the R – programming and yet it user interface is like SPSS or even better. The jamovi software minimizes the use of multiple files

and minimizes expenses on software this makes it suitable for students in tertiary institutions that are interested in economic research.

Theoretical Framework

According to Javier A. et. al (2011), hardware development is supported by engineering based on science, example physics, whose scientific theory is very well established, whereas software development is not. In the case of software development, there is a notorious absence of theory. Victor R., and Richard W., (1985) explained that interpreting and classifying faults in software is a difficult and Inexact task, the process often requires trying to recreate the original programmer's misunderstanding of the problem. There is no clear theory on software development, however prominent hypothesis was explained as follows. F1, F2, and F3 play fundamental hypothesis in preliminary software engineering theory; F1 = When applying software engineering techniques team composition (e.g., team size) has an effect on software development, F2 = Software engineering techniques of different paradigms (e.g., functional, object-oriented paradigms) differ in their efficiency and effectiveness and F3 = When using software engineering techniques, the experience of software developers has an effect on the efficiency of software development (Zendler, 2001).

Installation of jamovi

Jamovi is a new “3rd generation” statistical spreadsheet, the latest version is 1.2.27. The software has a developer’s hub, blog, forum and several free resources for users (Dev.jamovi.org 2021). The software is easy to install and is user friendly. The environment has a spreadsheet editor with icons for performing several statistical analysis and mathematical models. In installing jamovi there are two options for download which are “solid” which is stable and recommended for most users and the “current” which has latest features that are updated regularly once installed. Jamovi environment is a spreadsheet which is easier to handle. jamovi is a free and open-source neutral platform, the software is well designed, simple to utilize, “community driven” and compatible with Windows operating system (Jamovi.org, 2021).

Jamovi computational and analysis features

Jamovi installation process is quick and fast. The software is user-friendly and easy to analyze and visualize data. (datalab.cc, 2021a). jamovi is a powerful alternative to other expensive software such as International Business Machines (IBM) Statistical Package for Social Sciences (SPSS), Statistical Analysis System (SAS), and Stata (Datalab.cc, 2021b). The results of jamovi analysis are displayed like SPSS software, the working environment uses R programming language and the R codes can be typed and run in jamovi successfully (sps.org, 2021). The software performs advanced statistical analysis. It is a free substitute to expensive software such as SPSS. The software outputs nice looking tables and charts. Jamovi has good computational and analysis features, the software easily allows users to filter out variables during analysis. It is easy to import single and multiple files. For data analysis jamovi is far more superior than regular spreadsheets (e.g. Microsoft Excel).

Jamovi compatibility with R

Jamovi is compatible with R-programming language. The software handles (a) CSV Files and (b) jamovi Files – OMV files opened and saved in jamovi. The software a capacity to produce equivalent R programme codes for analysis. (Jamovi.org, 2021)

Using Jamovi for Calculating Measures of Central Tendency

There are two types of statistical methods which are used in data analysis: (1) Descriptive statistics and (2) Inferential statistics. The descriptive statistics summarizes and organizes data from a sample or population, while inferential statistics uses data from a sample to interpret the descriptive statistics and draw conclusion (Urdan, 2021)

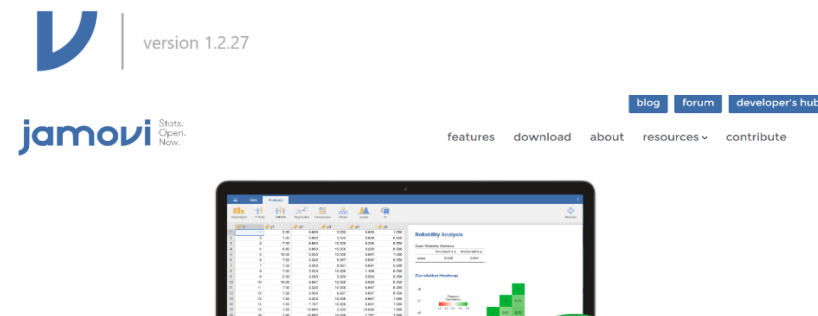
The measures of central tendency are (1) Mean, (2) Mode and (3) Median. The “mean” is calculated by summing of all the values in the dataset and dividing by the number of the values. The “median” is the middle value of the ordered data set and the number the occurs most often in the data (Pritha, 2020). The “mode” is the value with the highest frequency in the dataset. Data set may have a single mode , double or multiple mode or no mode at all.

Exploring jamovi in screenshots

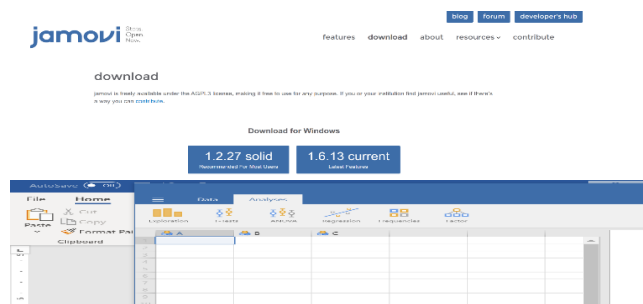
The measures of central tendency and measure of variability can be calculated with jamovi software as explained below. The example of the analysis here is for Windows Operating System(OS), after installation of the software.

Figure 1

Screenshot of jamovi Software installation page



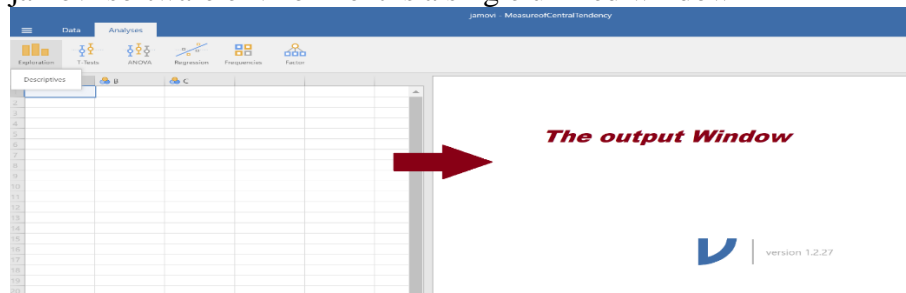
Note: This screenshot is directly from the jamovi website <https://www.jamovi.org/> before downloading on the computer



Note: This screenshot is directly from the Windows OS computer after downloading jamovi

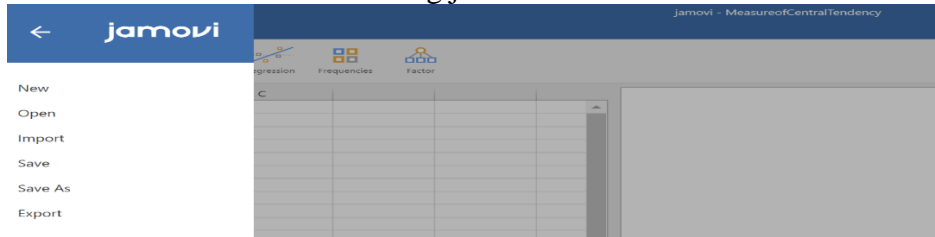
Figure 2

jamovi software environment is a single unified window



Note: the jamovi software platform is in two parts, the left side is the data panel for entering data, while the right part displays the results of the analysis

Figure 3
Screenshot the window for saving jamovi file



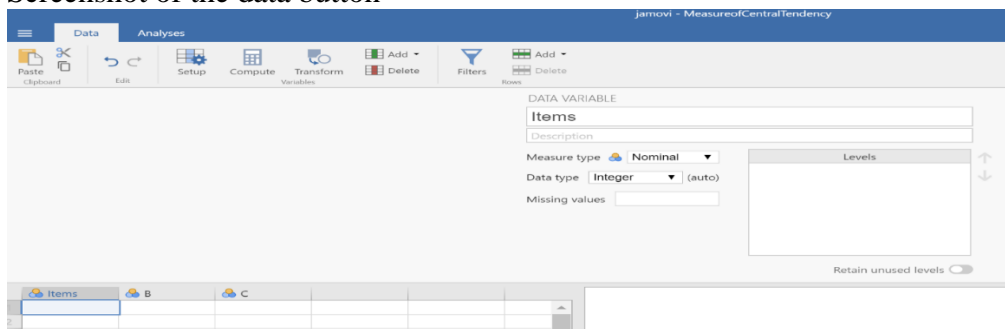
Note: jamovi is compatible with many file formats (Rafi, 2021)

Figure 4
Screenshot creating a file



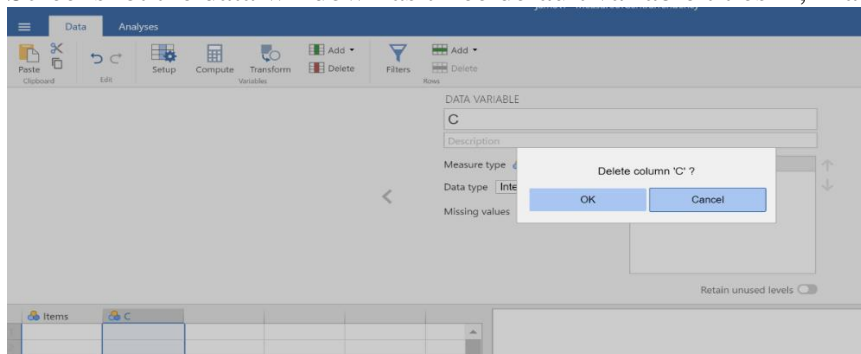
Note: After entering data it can be saved in .omv file format for jamovi (Filesuffix, 2021)

Figure 5
Screenshot of the data button



Note: this displays the variable titles which can be changed. Click on Data and then on setup to change the variable titles and data type

Figure 6
Screenshot the data window has three default variable titles A, B and C.



Note: to delete the variable we right-click and delete. We leave only the variables of interest

Figure 7

Screenshot using the hide button by the right using the screen capture tool

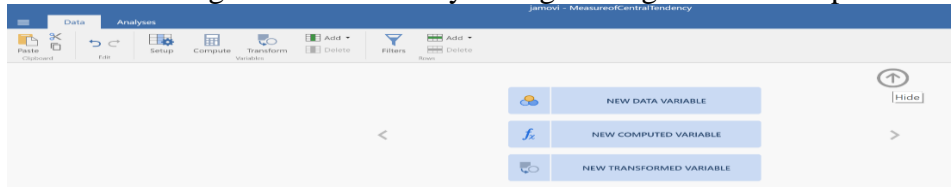
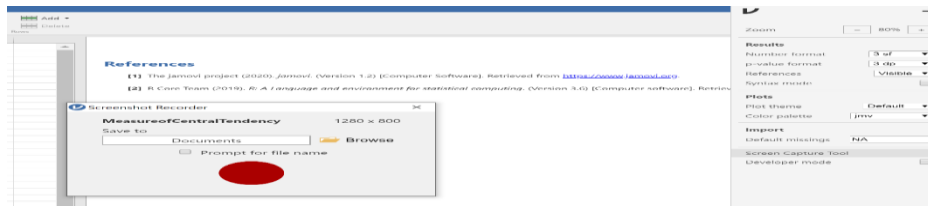


Figure 8

Using the inbuilt screen capture tool



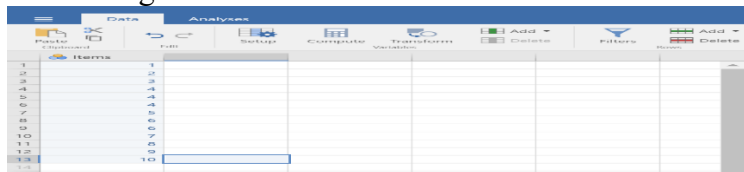
Note: the screen capture tool is located under the import category and you can capture the jamovi environment by clicking on it

Calculating “Mean” and “Median” Using jamovi

After opening the jamovi environment and entering or opening the desired data file, the measures of central tendency can be calculated.

Figure 9

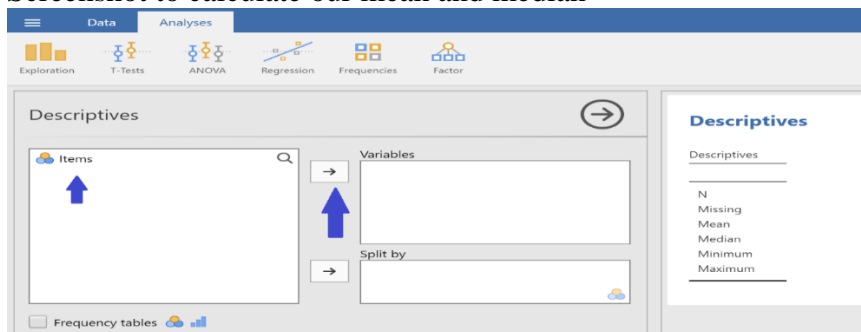
Calculating the “mean” of the dataset



Note: the data here is imputed directly on the jamovi spreadsheet

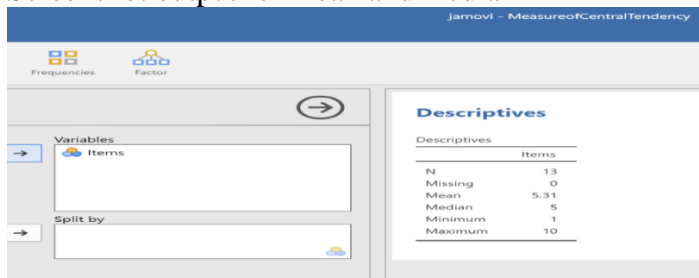
Figure 10

Screenshot to calculate our mean and median



Note: We need to click on the variable of interest (“Items”) and the arrow pointing right. The jamovi software automatically gives (1) Mean and (2) Median (user guide - jamovi, 2021)

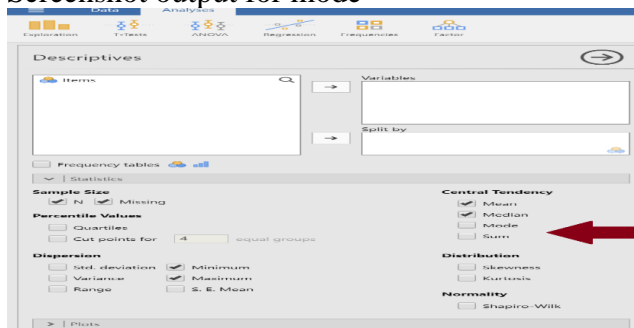
Figure 11
Screenshot output for mean and median



Calculating the “Mode” using jamovi

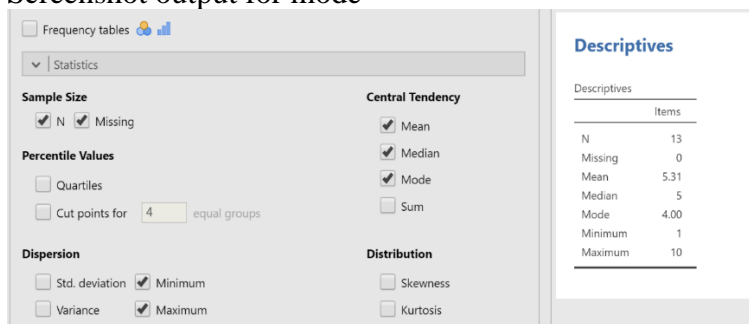
Below is the step involved in calculating “mode” in jamovi

Figure 12
Screenshot output for mode



Note: The mode is not available by default but can be checked under Central Tendency (jamovi for beginners, 2021)

Figure 12
Screenshot output for mode



Note: the output of the mode is displayed by the right

Jamovi for Measures of Variability

The measures of variability in statistics shows dispersion or how far data sets are away from the center. There are three measure of dispersion: (1) Range, (2) Variance and (3) Standard Deviation.

The Range

The Range is the difference between maximum value and the minimum value in the data set. (Urdan, 2021).

The Variance

The variance provides the statistical average of the amount of dispersion in the distribution of the dataset (Urdan, 2021).

The Standard Deviation

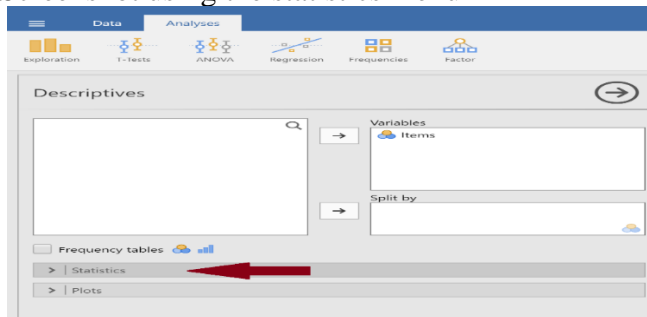
Standard deviation is the square root of the variance. The standard deviation measure dispersion of a dataset relative to its means (Urdan, 2021).

Calculating Range, Variance and Standard Deviation

Below is an explanation of how the measures of variability are calculated in jamovi

Figure 13

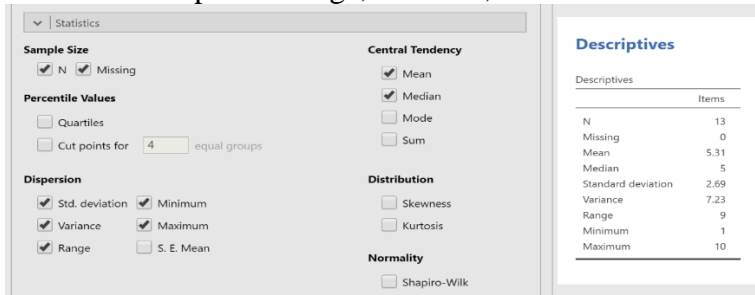
Screenshot using the statistics menu



Note: We click on the statistics and a menu will pop open and then we select, Range, Variance and Standard Deviation

Figure 14

Screenshot output for range, variance, and standard deviation



Note: this is simply achieved by clicking on the checkbox

Challenges using jamovi software

While the strength of jamovi is in its ease of use and simplicity, its weakness or challenges are reliance on structured data. This implies that raw data needs to be organized before analysis in the program. Some reviews on the platform indicates that software has low capacity to handle very large and unstructured data sets. The software is relatively new and there are limited materials and books on jamovi (Barchard, Helm and Watt, 2021).

Findings

Jamovi software is user friendly and can perform many statistical analysis and descriptive statistics. The software can perform analysis of variance and analysis of covariance, regression analysis, contingency tables and so on. (sps.org, 2021).

Jamovi is simple and easy to use. The software has interactive change to analysis just by clicking the checkbox without re-running the whole analysis. (spsp.org, 2021)

Jamovi environment is a spreadsheet which is easier to handle. The environment is compatible with R programming language and R codes can be typed and run in jamovi (spsp.org, 2021)

The jamovi software can help researchers easily learn and test R codes while working in the spreadsheet environment

Both jamovi software and R programming language are free and open source.

Jamovi is compatible with many file formats such as; .csv, .txt, .jasp, .sav, .rdata, .dta, .xlsz, .xpt and so on (Rafi, 2021)

Jamovi is compatible with R and has user-friendly interface that is convenient for sporadic data analysis without much need of coding.

The jamovi software has two options for download which are “solid” which is stable and recommended for most users and the “current” which has latest features that are updated regularly.

Jamovi is found to be useful for with organized and structured data. It is also suitable for Descriptive statistics, non-parametric tests, regression analysis, analysis of variance and covariances

Conclusion

Jamovi is a simple and easy to learn software. The calculations of the measures of central tendency were found to be very fast and flexible, just clicking checkbox without re-running the whole analysis. Jamovi is a simple yet powerful software with more functionalities than Jeffrey's Amazing Statistics Program (JASP) and Spreadsheet (e.g. Microsoft Excel). With jamovi a Ph.D. student can comfortably conduct single and multiple variable analysis.

Recommendations

Jamovi is recommended when there is well organized structured data that is ready for analysis.

Descriptive statistics, non-parametric tests, regression analysis, analysis of variance and covariances can be conducted with jamovi easily

The jamovi software was found to be simple, flexible, and easy to learn with very sophisticated analytical capacity. jAMOVI is highly recommended for users of R, SPSS, or SAS they will find the interface familiar. jAMOVI is also ideal for individuals that analyze data sporadically as they do not have to code for simple tasks.

The understanding of R-programming is important to knowing some advanced aspects of jamovi.

It is recommended that researchers learning jamovi for the first time should also study R programming

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Constraints to Farmers' Adoption of Agricultural Technology: A Case of *Sawah* Eco-technology among Farming Households in Kebbi State Nigeria.



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Abstract: *Sawah* rice production system was introduced to the inland valley of Nigeria to increase the yield of rice and to overcome soil fertility problems through geological fertilization processes. This study identified the constraints faced by farmers adopting *Sawah* eco-technology in Kebbi state Nigeria. Quantitative data were collected from 350 purposefully selected *Sawah* farmers based on their participation in *Sawah* rice production in the study area. Data used in this study were collected in all the *Sawah* sites in Kebbi State namely Argungu, Birnin Kebbi, Jega and Bagudu. A well-structured interview guide was used to elicit information from the farmers. The results of the study revealed that *Sawah* rice farmers are mostly male, average age was 48.33years, mean household size of 14 and average farm size of 4.66 ha. The mean yield was 6.88 tonnes per hectare. The mean number of years of experience with rice production is 23.63 years. The results of the study also revealed that technological constraints (94.3%), land tenure (80.9%), production (79.4%), information and training constraints (75.1%), market constraints (61.7%) and input availability (52.3%) are the main constraints confronting farmers. The results revealed that there is a significant relationship between yield and technological constraints, land tenure, production constraint and information and training constraints. The study recommended that to solve these problems, decision makers have to make a range of policies and strategies to boost agricultural production and productivity. These include training of farmers on the operation and use of power tiller, simplify land tenure and ownership structure in Kebbi state to guarantee secured access to land and training extension agents on the rudiments of *Sawah* technology to enhance their work.

Keywords: *Sawah*, Constraints, Adoption, Kebbi, Nigeria.

Introduction

Rice is one of the three leading food crops of the world and the most economically important food crop in many developing countries, with maize (corn) and wheat being the other two. Rice is a major commodity in world trade and has become the second most important cereal in the world after wheat in terms of production, due to decline in maize production (Jones, 1995). Rice has also become a major crop in many developed countries where its consumption has increased considerably (Ajala and Gana 2015). It is valued as the most important staple food for over half of the world population. More than half of the world's population depends on rice as the major source of calories (Ajala and Gana 2015). According to a comprehensive study conducted by the Food and Agricultural Policy Research Institute, the world's demand for milled rice is expected to rise to 496 million tons in 2020, from 439

million tons in 2010. By the year 2035, the requirement will further rise to an estimated 555 million tons.

In Nigeria, rice is most consumed by many households among food crops. Thus, rice has become a strategic commodity in the Nigerian economy. Nigeria has a leading role in rice production in West Africa. With the available literature, annual rice production in Nigeria has increased from 5.5 million tons in 2015 to 5.8 million tons in 2017 (Udemezue, 2018). The increase was as a result of the Central Bank of Nigeria (CBN)'s Anchor Borrowers Programme with a total of 12 million rice producers and four million hectares of FADAMA rice land (RIFAN, 2017). Nigeria was ranked the highest as both the producer and consumer of rice in the Sub-region (WARDA, 1996). Rice is known to have been grown in Nigeria for over 3000 years (Imolehin & Wada, 2000). Rice is an important source of nutrition and one of the major staples which can provide Nigerian population with the nationally required food security. One hundred and eighty million people are estimated to consume nearly 6 million tons of rice per year. The demand for rice has been increasing at a much faster rate in Nigeria than in other West African countries.

Since rice can grow in every ecological zone, Nigeria has such a tremendous potential for its production. Estimates by WARDA (1996), Singh et al. (1997) and Imolehin and Wada (2000) put potential areas for rice production and actual as 4.6 - 4.9 million ha and 1.7 million ha respectively. However, the domestic production has not met the demand. Out of the thirty-six States in Nigeria, only eight States can produce rice in a large scale. These states include Anambra, Nassarawa, Ebonyi, Kaduna, Niger, Kano and Benue (Udemezue, 2018). About 3.1 million tons is imported despite a tariff of 70% in 2015. Over half of imports entered Nigeria from neighbouring Benin Republic where the duty is only 12%. Nigeria's rice import has jumped to 3.4 million metric tons in 2018, making Nigeria the world's biggest rice importer after China (Grow Africa, 2018).

The Sawah rice production system was introduced to the inland valley of Nigeria to increase the yield of rice because it can overcome soil fertility problems through geological fertilization processes (Oladele & Wakatsuki, 2008). Sawah refers to a leveled bunded, puddled rice field surrounded by banks with inlets and outlets for irrigation and drainage. The basic elements of the Sawah system include improved irrigated rice basins, seedbed preparation, transplanting and spacing of seedlings, fertilizer application, and, most importantly, water management. According to Nwite et al. (2011), Sawah lowland farming with small-scale irrigation schemes for integrated watershed management constitutes the most promising strategy for addressing soil fertility problems and restoring the degraded watershed in the tropical environment for increased and sustainable food production. The Sawah system utilizes the inland valleys, which are reported to be high in fertility, through appropriate water management. According to Nwite et al. (2011), Sawah remains the prerequisite technology for restoring and conserving the degraded watershed in the tropical environment for increased and sustainable food production and ultimately in pursuit of the much-awaited Green Revolution (GR) in West Africa.

The success of the green revolution experienced by Asian countries was predicated on the adoption of improved technologies such as Sawah (Ravallion and Chen, 2004). Sawah technology contributed immensely to the achievement of Green Revolution in Asia. Wakatsuki *et al.* (2009) asserted that *Sawah* rice farming system is the only solution to the long awaited green revolution in West Africa. Sawah was introduced to Kebbi State in 2012 with 4 Fadama groups in Birni Kebbi, Argungu, Bagudu and Jega. These groups were

supported with water pumps, power tiller, fertilizer, improved rice seeds and herbicides.

Our previous study (Alarima *et al*, 2018) identified the factors affecting the adoption of Sawah eco-technology in Kebbi state, Nigeria. Although the introduction and adoption of Sawah eco-technology has recorded a tremendous increase in rice production, however farmers in Kebbi state still face a lot of challenges. This study identified the constraints faced by farmers adopting Sawah eco-technology in Kebbi state Nigeria. The result of this study therefore will bring about paradigm improvement in the adoption and use of Sawah technology in Nigeria especially in Kebbi state the largest rice producer.

Methodology

Study Area

The study was carried out in Kebbi State. Kebbi is a state in northwestern Nigeria with its capital Birnin Kebbi. The State was created in 1991, out of the then Sokoto State. The State has a total population of 3,137,989 people as projected from the 1991 census, within 21 Local Government areas. Located between latitude 10°8' N and 13°15' N and longitude 3°30' E and 6°02' E, the state is bounded by Sokoto State, Zamfara State, Dosso Region in the Republic of Niger to the North and East, Niger State to the South, and Benin Republic to the West. It has a total land area of 36,129km² (Britanica.com). The state has Sudan and Sahel-savannah. The southern part is generally rocky with the Niger River traversing the state from Benin to Ngaski LGA. The northern part of the state is sandy with the Rima River passing through Argungu to Bagudu LGA where it empties into the Niger. Agriculture is the main occupation of the people especially in rural areas, Crops produced are mainly grains; animal rearing and fishing are also common. [Wikipedia undated].

Sampling and Data Collection

Quantitative Data: Quantitative data were collected from 350 purposefully selected Sawah farmers in the study area since there is no comprehensive data on the number of farmers adopting the technology. Data used in this study were collected in all the Sawah sites in Kebbi State namely Argungu, Birnin Kebbi, Jega and Bagudu. The farmers were selected based on their participation in Sawah rice production. A well-structured interview guide was used to elicit information from the farmers.

Measurements

Yield

Yield was measured as the weight of the paddy rice harvested by the farmers in the previous farming season in tones (tons).

Constraints Confronting Adoption

The challenges were measured as those related to land acquisition and tenure, marketing challenges, information and training challenges, technical challenges, production and on-farm challenges and input availability related challenges (Alarima *et al.*, 2011).

Data Analysis

Descriptive statistics were used to analyze the socio-economic characteristics of the farmers. Regression analysis was used to determine the relationships between the yield and constraints as predictor variables as shown in the equation below:

$$Y = a + \beta X_1 + \beta X_2 + \beta X_3 + \beta X_4 + \beta X_5 + \beta X_6$$

- Where
- Y = Yield
- X₁ = Land tenure
- X₂ = Production constraint
- X₃ = Information and training constraints
- X₄ = Input availability related constraints
- X₅ = Market constraints

Measurement of Variables

The measurement of the main variables of the study is shown on Table 1.

Table 1: Measurement of Variable

Description	Measurement
Sex	Male (1) and female (2)
Age	Continuous variable in years
Educational level	No formal education (1), primary education (2), secondary education (3), and tertiary education (4).
Household size	Number of persons in the household
Farm size	Continuous variable in hectares
Yield	Continuous variable in tones
Years of experience	Continuous variable in years
Income	Continuous variable in Naira (1000)

Results And Discussion

Socio-economic and Farming Characteristics of the Respondents

The results of the study as shown in Table 2 revealed that Sawah rice farmers are mostly male in Kebbi state. This shows that male farmers dominated Sawah farming in the study area. This may be due to the fact that Sawah is energy demanding which may discourage female farmers from adopting the technology. The result agrees with a previous study earlier carried out in the same study location by Alarima et al (2018). The results further showed that the average age was 48.33years with few elderly farmers involved in Sawah farming in Kebbi state. Majority of the farmers had no formal education but rather attended Quranic schools. The household size of farmers ranged between 3 and 27, with a mean of 14. These members of the household may serve as source of labor that can be used on the farm. Farm size ranged between 0.91 and 50 ha. The average farm size of the respondents is 4.66 ha. The mean yield was 6.88 tonnes per hectare. This is better than the average yield of 3 tonnes per hectare from tradition system of rice production in Nigeria and is comparable to rice yield in Indonesia and Japan and other Asian country where Sawah system was adopted. The mean number of years of experience with rice production is 23.63 years. Thus, the respondents have accumulated enough experience with rice production to be capable of using Sawah technology. Additionally, their experience with rice production is of great importance when developing the skills required for Sawah rice production. Annual income of the farmers ranged from ₦50,000 and ₦100,000,000 with an average of ₦214,000 (\$548 [US dollars) at the rate of ₦390/\$.

Table 2: Socio-economic and Farming Characteristics of the Respondents (n=350)

Variable	Min	Max	Mean
Sex	Mostly male		
Age	20	72	48.33
Educational level	Most of respondents had no formal education		
Household size	3	27	13.94
Farm size	0.91	50	4.66
Yield	2	240	6.88
Years of experience	1	40	23.63
Income	50	100000	214

Constraints Confronting Adoption of *Sawah* Eco-technology

The results of the study as shown in Table 3 revealed that technological constraints (94.3%) such as non-availability of power tillers for land preparation activities, lack of skill for land and site selection and complexity of water management are faced by *Sawah* farmers in Kebbi state. The results of the study revealed that land tenure (80.9%) which includes poor fertility of the soil, poor road network from their farms to city centre, and topography of the farm that results in high cost of leveling of *Sawah* basins are faced by *Sawah* farmers in the study area. The results of the study further revealed that production and on-farm constraint (79.4%) such as water management, flood, drought, weeds, pest and diseases are faced by *Sawah* farmers in the study area. The results of the study also revealed that information and training constraints (75.1%) which include lack of access to extension services and lack of technical knowledge of *Sawah* especially water management are faced by *Sawah* farmers. The results of the study revealed that market constraints (61.7%) such as lack of viable financial agencies to support their production, poor capital base for farming and non-availability of loan to support farming are faced by *Sawah* farmers. The results of the study revealed that input availability related constraints (52.3%) such as poor varieties of seeds, more requirement of fertilizers and manure, unavailability of chemicals for weed and pest control, labour constraints, lack of processing facility, power tiller and high cost of inputs are faced by *Sawah* farmers in the study area.

Table 3: Constraints faced by *Sawah* farmers (n=350)

Constraints	Frequency	Percentage	Ranking
Land tenure	283	80.9	2nd
Production constraint	278	79.4	3rd
Information and training constraints	263	75.1	4th
Input availability constraints	183	52.3	6th
Market constraints	216	61.7	5th
Technological and scientific constraints	330	94.3	1st

Relationship between yield and constraints Confronting Adoption of *Sawah* Eco-technology

The results revealed that there is a significant relationship between yield and land tenure. This implies that land tenure influenced the yield of farmers adopting *Sawah* technology in Kebbi state. The study also revealed a significant relationship between yield and production constraint. The implication is that production constraints such as water management, flood, drought, weeds, pest and diseases had influenced the yield of farmers adopting *Sawah* technology. The results further showed that a significant relationship between yield and information constraints. The implication of this is that access to required information and training on *Sawah* technology had a significant influence on the yield. The results revealed that there is a significant relationship between yield and technological and scientific constraints. This implies that technological constraints which include non availability of

power tillers for land preparation activities, lack of skill for land and site selection and complexity of water management significantly influenced yield of farmers adopting Sawah technology.

According to FAO (2001) land tenure and barriers related to land availability are major constraints to agricultural intensification. de Janvry et al, (2011) reported that One of the most highlighted constraints to agricultural technology adoption is the availability of cultivable land. They argued that availability of land helps reduce the liquidity constraints faced by households and also reduces risk aversion. On the other hand, ownership of large tracts of land can facilitate experimentation with new agricultural technologies, and also determine the pace of adoption as large land owners are more likely to be the early adopters (de Janvry et al, 2011). According to Carletto et al, (2007), the quality of land may be a major factor in deciding the use of key inputs such as chemical fertilizers, or adopting improved crop varieties due to expected higher returns. As reported by Zelleke et al. (2010), the core constraints to adoption of innovation include topsoil erosion, acidity, significantly depleted organic matter due to widespread use of biomass and dung as fuel, depleted macro and micro-nutrients, destruction of soil physical properties and a rise in soil salinity.

Kijima et al, (2011) reported that farmers in Sub-Saharan Africa (SSA) face a host of constraints, ranging from infrastructure, incentives, and liquidity, which impede adoption and retention of agricultural technology. Failure of extension workers to reach farmers, unstable market price, insufficient finance, inadequate supply of innovation, high cost of innovation, lack of production skills, inadequate agricultural input and shortage of land for farming and disease attack, lack of incentive for adoption of innovation, limited access to credit, inputs and lack of access to membership in cooperatives and other rural organizations are the major constraints to adoption of technology by farmers (Ayoade and Akintonde, 2012).

An important aspect in the adoption process is the identification and proper use of appropriate communication (Blum 1987). Alarima et al (2020) reported that effective information is important in dissemination of Sawah technologies in Nigeria. Ranjitha *et al.* (2006) reported that extension remains a critical factor in technology adoption due to lack of clarity in policies for both extension agencies and agents, lack of a longer-term strategy, vision and plan, limited role of farmer organizations, poor financial and administrative capacity extension offices, absence of monitoring and evaluation indicators and information and communication technology underdevelopment. An important pre-requisite for the adoption and diffusion of any innovation within a social system is the effective communication of information relating to the innovation involved (Bakkabulindi, 2014).

The non availability of power tillers, unavailability of technical guidance on the use of power tiller, lack of skill for seed and site selection, lack of knowledge and skill about weed management, power tiller operation for puddling and maintenance and lack of knowledge and skill about bunding have negative effects on the yield of farmers adopting Sawah technology (Alarima *et al.*, 2011). Silva and Broekel (2016) highlighted factors constraining the adoption to include lack of resources, incompatibility and complexity of new technology, socio-economic and cultural constraints, inadequacies in extension intervention, technical training and information.

Although input availability and economic and market related constraints are found to be challenges to adoption of Sawah technology in the study area. However, they do not significantly influence the yield. This may not be far from the fact that government, both at

the state and the federal level had intervened in the area of Anchor Borrower's Programme (ABP) which provided the necessary inputs to farmers for rice production and also create a channel for marketing of their rice through the off-takers. This has greatly improved Sawah rice production in Kebbi state.

Table 4: Regression analysis showing the relationship between Yield and constraints (n=350)

Variables	Standardized coefficients (b)	t-value	p	Decision at p-value = 0.05
Land tenure	0.154	2.787	.006	Significant
Production constraint	0.144	2.385	.018	Significant
Information and training constraints	0.116	1.999	.046	Significant
Input availability related constraints	0.086	1.566	.118	Not significant
Market constraints	0.046	0.822	.412	Not significant
Technological constraints	0.126	2.220	.027	Significant
Constant	-	3.738	.000	-

R = 0.242, R² = 0.059, Adjusted R² = 0.042, F = 3.48,

Conclusion and Recommendation

The study identified the important constraints confronting the adoption of Sawah technology in Kebbi state that must be addressed in order to improve the adoption of Sawah system of rice production. Until these challenges are identified and addressed, the much desired self-sufficiency in domestic rice production will remain a mirage. The results of the study revealed that Sawah rice farmers are mostly male, average age was 48.33 years, mean household size of 14 and average farm size of 4.66 ha. It was established from the findings of this study that a diversity of challenges limited use and adoption of Sawah technology leading to poor yields and thus low incomes for the farmers. The main constraints confronting farmers are technological and scientific constraints, land acquisition and tenure, production and on-farm constraint and information and training constraints. The results revealed that there is a significant relationship between yield and technological and scientific constraints, land acquisition and tenure, production and on-farm constraint and information and training constraints. The study recommended that to solve problems, decision makers have to pursue a range of policies and strategies to boost agricultural production and productivity. These include:

1. Simplify land tenure and ownership structure in Kebbi state to guarantee access to land.
2. Training of farmers on the operation and use of power tiller.
3. Training extension agents on the rudiments of Sawah technology to enhance their work.
4. Moving more farmers into the Anchor Borrower's Programme (ABP) net so as to extend the benefits to all the farmers in the study area.

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Women Participation in *Acha* Processing in Jaba Local Government Area of Kaduna State, Nigeria



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Abstract: *The purpose of this paper was to identify the factors influencing rural women participation in acha processing in Jaba LGA. Using multi-stage sampling, 120 rural women were selected randomly. Questionnaire instrument was used to generate data. Variables such as education ($p < 0.01$), age ($p < 0.05$), marital status ($p < 0.05$), and access to market ($p < 0.01$) significantly influence participation of rural women in acha processing activities. Most of the women source funds for their processing activities from their personal savings, while about 2% got their processing funds from friends. Acha processing is profitable in the study area with a gross return per naira invested to be ₦1.098. However, the respondents are faced with challenges (lack of modern machines, credit and high cost of labour). The study thus, recommended that governments and well-meaning Nigerians should assist by providing modern machines for acha processing in order to reduce drudgery and encourage processing. Low interest rate credit facility should be made accessible to processors to enable processors to expand their business.*

Keywords: *Acha*; Agricultural Processing; Kaduna State; Women Participation

Introduction

Acha (*Digitaria spp*), a cereal crop popularly known in Nigeria is reported to be the oldest West African cereal (Cruz, 2004). For thousands of years, West Africans have cultivated it across the dry savanna in areas such as Cape Verde, Lake Chad region, Mali, Burkina Faso, Guinea and Nigeria. In Nigeria, *acha* is an important cereal crop grown in some parts of Kaduna, Bauchi and Plateau States (Philip & Itodo, 2006). *Acha* is one of the world's fastest growing cereal, reaching maturity as quick as six to eight weeks. It is a crop that can be grown in semi-arid areas with poor soils, where rainfall is brief and unreliable (Chinwe, Ojukwu & Jackson, 2015). There is still a wide gap between the quantity supplied and the quantity demanded. This is because of the difficulties involved in its production and processing which is impeding the participation of many especially women (Philips & Itodo, 2006).

Rural women form the most productive work force in the economy of nations, they are molders and builder of any nation's destiny and are therefore crucial to the sustainable development of the country including Nigeria (Banji and Okunade, 2005; Mahashwari, 2001; Mucavele, 2015). Women are the most important actors in the food chain which begins from

farm production, marketing and intra house hold distribution of food. They play a lead role in post-harvest activities such as shelling of grains, storage and processing (Adebola, Oladimeji, Koichi & Tadasu 2015; Odurukwe, Matthews, Njoku, & Ejiogu, 2006; Satyavathi, Bharadwaj, & Brahmanand, 2010).

In transforming agriculture in the country, due attention should be given to women processors who add value to food crops (Adenugba & Raji, 2013; Adeoye, Oyeleye, Ajibade, Daud, Alabi, & Amao, 2018; Onyemauwa, 2012; Yusuf, Akinola, Abdulsalam, Shuaibu, Yusuf & Yusuf, 2014). The demand for *acha* and its products have increased in both the national and international markets. This is as a result of the increased use of the crop for food and other uses.

There is, however, paucity of information on the socioeconomic factors influencing women participation in *acha* processing in Jaba Local Government Area (LGA) of Kaduna state, Nigeria. This study is thus conducted to: (i) identify the methods of *acha* processing and types of labour employed; (ii) identify the sources of funds for processing; (iii) determine factors influencing rural women's participation in *acha* processing; (iv) determine the profitability of processing and (v) to identify the challenges processors encountered in the study area.

Literature Review

Acha cultivation and the center of origin is around the central delta of the Niger and neighboring areas dating back to 5000BC. The crop is the most important of the diverse group of wild and domesticated *Digitaria species* that are harvested in the savannah of West Africa; the smallest seed of all species of millets (Seignobos and Tourneux, 2002). *Acha* is a low input demanding crop which tolerates a wide range of soils, but not waterlogged clayed soils (Philip & Itodo, 2006). The uniqueness and potential of *acha* in contributing significantly to whole grain diets in Africa and, its proper utilization would lead to improvement in economic status of the producers and processors in (Chinwe *et al.*, 2015).

Agro processing is commonly known to contribute significantly to the improvement of income and food availability which enhance the sustainability of smallholder farmers' livelihoods (Mhazo, Mvumi, Nyakudya & Nazare, 2012). Several researchers conducted empirical studies on the participation of women in agricultural activities such as; Mirtorabi, Hedjazi, & Hosseini (2012) study on factors influencing rural women's participation in food processing activities and the results of the study indicated that rural women's participation in processing depended on variables such as the level of education, family size, animal ownership, and using extension services. The results also showed rural women with low level of literacy were more involved in food processing activities than women with higher levels of education.

Rural women are important for increasing agricultural production and productivity, they participate in food and cash crops and manage mixed agricultural operations, involving crops, livestock, fish farming and processing (FAO, 2011; Imeh & Odibo, 2013; Onyemauwa, 2012). Similarly, the study conducted by Okolo, Omoregbee & Alufohai (2018) on women's involvement in shea butter production showed age, income and household size influenced their participation. Kalyani, Krishnamurthy, Rao & Kumari (2011) result showed the women were of poor background, had limited access to resources and their overall rate of participation in agriculture was higher than that of men. There are many enormous challenges and constraints faced by women in agriculture such as use of modern methods for processing,

financing, policy and lack the power to make decisions without their husbands consent (Anyakoha & Mbanefoh, 2000; Godfrey, 2010; Fischer & Qaim, 2012; Odi, 2014; Pala, 2013; Rahman, 2008).

Methodology

The study was conducted in Jaba LGA of Kaduna State. The study area is located in the Guinea Savannah zone of Nigeria, between Latitude $8^{\circ} 00' - 8^{\circ} 21'N$ and Longitude $9^{\circ} 26' - 9^{\circ} 28'W$. It shares boundaries with Kachia LGA to the North, Kagarko LGA to the West, and Jema'a LGA to the East. Jaba LGA is made up of 13 districts which include: Ankung, Bitaro, Chori, Daddu, Dura, Fada, Fai, Forgyei, Kurmin Jatau, Ngumkparo, Sabon Gari, Sab-Zuro and Samban. The major crops produced in the area are: ginger, *acha*, maize, sorghum, rice, yam, groundnuts, cocoyam and cassava (KADP, 2019).

Sampling procedure and sample size

A three-stage sampling procedure was used to select one hundred and twenty respondents for the study. The first stage was the purposive selection of four (4) districts (Ankung, Bitaro, Dura and Fada) out of the 13 districts in the LGA. The second stage involved random selection of four (4) villages; one village from each of the selected districts where *acha* is intensively cultivated and processed. Lastly, random sampling was used to select thirty (30) respondents from each of the selected villages to give a total of 120 respondents. A structured interview schedule was used to elicit information from processors. Descriptive statistics was used to achieve objectives i, ii and v, while regression and gross margin was used to achieve objectives iii and iv respectively.

Regression model

Regression model as used by Adeoye *et al.* (2018), Akinwekomi *et al.* (2017), Okolo *et al.* (2018) and Onyemauwa (2012) among others was used. Mathematically, the multiple regression analysis is presented by the formula as expressed below:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + U$$

Where Y = Participation in processing (threshing, de-stoning, milling, winnowing).

a_0 = Intercept

X_1 = Age (years)

X_2 = Marital status (1 = married, 0 = single)

X_3 = Household size (No of persons)

X_4 = Level of education (years)

X_5 = Processing experience (years)

X_6 = Access to extension services (1 = Yes, 2 = No)

X_7 = Access to credit (1 = Yes, 2 = No)

X_8 = Membership of association (1 = Yes, 2 = No)

X_9 = Access to market (1 = Yes, 2 = No)

U = Error term

b_{1-9} = Regression coefficients

Gross Margin

This is the difference between the Enterprise Gross Revenue and Total Variable Cost.

$$GM = GR - TVC$$

Where:

GM = Gross margin

GR = Gross return Total revenue generated

TVC = Total Variable Cost incurred in the processing of *acha*

Results and Discussion

Methods of *Acha* Processing and Type of Labour Employed

The result of the study conducted showed the women processed *acha* manually. Once dry, the plant is threshed to separate the grain from the stems. Threshing is traditionally done manually with sticks. The removal of the hulls from paddy *acha* by the women is by pounding the grains with a pestle in a mortar, and then winnow several times to separate the grain from the hulls. This is an indication that processors in the study area do not have access to modern equipment/ machines for processing. This probably can account for low productivity of the enterprise.

Similarly, Akinagbe & Ayibiowu (2020); Awerije (2014); Cruz, Béavogui, Dramé, & Diallo (2016); Gyang & Wuyep (2005); stated that manual de-hulling/threshing has low output, required a lot of physical energy, skill and experience to ensure that all grains are removed from the panicles with minimal spillage. Furthermore, the result showed majority (65%) used family labour while 35% employed hired labour for *acha* processing.

Table 1: Distribution of respondents according to method of *acha* processing and type of labour employed

Acha Processing Method	Frequency	Percentage
Manual	120	100
Mechanical		
Total	120	100
Type of labour used*		
Family	78	65.0
Hired	63	35.0

*Multiple response

Source: field survey 2018

Sources of Fund for *Acha* Processing

The amount of credit available to women farmers from financial houses or organizations is either very small or not available. The annual income of most women is generally low and this could have significant impact on the participation of women in agricultural activities (Food and Agricultural Organization [FAO], 2007). The result of this study revealed 98% of the women source funds for their processing activities from their personal savings, while about 2% got their processing funds from friends. This implied that funds for *acha* processing is sourced through personal savings. That is, there is no credit scheme available for processing in the study area. This result revealed the processors lack access to credit and availability of credit is an important factor in agro-activities. Ekong (2010); Yusuf (2017) asserts that credit is a very strong factor that is needed to acquire or develop any enterprise; its availability could determine the extent of production/processing capacity.

Table 2: Distribution of the respondents based on sources of funds for *acha* processing

Source of Funds	Frequency	Percentage (%)
Friends	2	1.7
personal savings	118	98.3
Total	120	100

Source: field survey 2018

Factors Influencing Rural Women Participation in *Acha* Processing

The adjusted coefficient of determination (R^2) square for the results is 0.57, while the F-ratio was 13.57. This implied that the independent variables in the model explained about 57% of variation in the dependent variable. The model was well fitted to the data since the F-ratio value (13.57) was highly significant ($PP < 0.01$), the regression result was statistically reliable. Table 3 showed six variables significantly influenced participation of rural women in *acha* processing activities. Age (0.033) significantly influenced participation of women at $p < 0.05$; this result implied that, the older processors are, the more they process *acha*. In a study by Khoza, Senyolo, Mmbengwa, Soundy, & Sinnett (2014) and Okolo *et al.* (2018), their results indicated the relationship between the age of the farmer and the decision to participate. Increasing age of the household head, up to a certain level is more likely to increase the level of participation. However, after the farmer reached a particular age, the level of participation is less likely to decrease.

Education was found to be significant to participation at 1% level of probability with a negative coefficient. The negative coefficient (-0.061) implied that as level of education increases, level of participation in *acha* processing decreases. This result conforms with earlier findings of Adesope, Nwakwasi, Matthews-Njoku, & Chikaire, (2010); Tologbonse, Jibrin, Auta, & Damaisa (2013), that the higher the educational level of the farmer, the higher the chances of getting better paying jobs or the higher the tendency to be involved in none agricultural activities. The coefficient of marital status was positive (0.612) and significant ($p < 0.05$) suggesting that women's marital status influence their level of participation in *acha* processing. This is possible since family members can assist or support them in the processing activities. This result did not conform to earlier studies Akinwekomi *et al.* (2017); Chikezie, Chikaire, Osuagwu, Ihenacho, Ejiogu, & Oguegbuchulam (2012); Itari, Anthony & Okeme (2015), whose result on marital status revealed that respondents who are single are more likely to engage in agribusiness.

Extension contact was positive (0.203) and significant at 10% level of probability. This implied that, the more informed the processors are, the more their participation in *acha* processing. Access to agro-processing-related training influence the extent of participation. Similarly, Khatun & Roy (2012) also found the evidence of the positive effect of training by extension agents. Access to market coefficient was positive (0.133; $p < 0.01$) which signifies; the more the processors have access to ready market, the higher their participation in *acha* processing.

Table 3: Factors influencing rural women participation in *acha* processing

Variables	Coefficient	Standard error	Significance
Age of Processors	0.033 *	0.009	3.667
Marital status	0.612 *	0.211	2.900
Household size	0.009 NS	0.011	0.818
Level of education	-0.061 *	-0.061 *	-3.813
Processing experience	0.013 NS	0.014	0.929
Extension contact	0.203 ***	0.107	1.897
Access to credit	0.223 NS	0.284	0.785
Cooperative membership	0.582 ***	0.500	1.164
Access to market	0.133 *	0.025	5.320

*, ** and *** implies significant at 1%, 5% and 10% respectively

NS = Not $R^2 = 0.61$ Adjusted $R^2 = 0.57$ F-ratio = 13.57

The Average Cost and Return of *Acha* Processing

The average *acha* paddy bought by processors in the study area at a mean market price of ₦48,750.00 contributed 86.35% of the total variable cost (TVC). The total cost (TC) of labour was ₦7,500.00 contributing 13.29%, followed by the cost of transportation (₦300.00) which contributed 0.53%. The gross revenue was ₦62,000.00, while the total variable cost was ₦56,450.00 on the average, with an average gross margin of ₦5,550.00. The average gross margin per sampled respondent was found to be ₦46.25kobo while the average gross return per sampled respondent was ₦516.67kobo. The gross return per naira invested was ₦1.098 on the average. It means that putting all the variable costs of processing into consideration, *acha* processing is profitable in the area. This result concurred with the finding of Abdurrahman, Nasiru, Iliyasu, Ja'afar, & Baidu (2015) that, the profitability index of *acha* was high in Bauchi State, suggesting that any effort to improve in the production would enhance economic capacity of the stakeholders.

Table 4: An average cost and returns of *acha* processing in the study area

Items	Amount (₦) / kg	% of total cost
Gross revenue	62,000	
Variable cost		
Cost of paddy <i>acha</i>	48,750.00	86.35
Cost of processing	7,500.00	13.29
Cost of transportation	300.00	0.53
Total variable cost	56,450.00	
Gross margin	5,550.00	
Average gross margin per respondent	46.25	
Average gross return per respondent	516.67	
Returns on naira invested	1.098	

Source: Field survey 2018

Constraints mitigating *Acha* Processing

All the respondents (100%) listed lack of machines as one of the problems of *acha* processing. This limits the ability of the processors to increase the quantity of *acha*. Similarly, Umuhoza (2010) observed women generally participate in manual processing of coffee. *Acha* processors used their previous savings to finance *acha* processing which did not permit large scale processing. Lack of credit (97.5%) ranked next to lack of modern machines indicated as one of the challenges the respondents encountered. This is in agreement with what Chikwendu and Adekoya (2008); Onuwa, Obisesan, Mailumo & Okeke-Agulu (2013); Abdurrahman *et al.* (2015) reported that, women's lack of land ownership right has hindered their access to bank loans and other forms of resources.

The high cost of labour for processing *acha* (90%) was ranked third. Due to the tedious nature of *acha* processing, hired labour is expensive because only those who are able, fit and are willing to participate in the processing. This result is in consonant with finding of Soniia (2015), compared to men, women had shortage of funds to invest in agriculture generally. The marketing system in the study area is not standardized, instability of agricultural product prices all contributed to the challenges encountered by the processors. This is confirmed by Oyewole (2017) that rural women are faced with constraints in their processing activities.

Table 5: Distribution of the respondents according to challenges encountered

Challenges of <i>acha</i> processing	Frequency	Percentage
Lack of modern machines	120	100
Lack of Credit Facility	117	97.50
High Cost of Labour	108	90.00
Lack of information	93	77.50
Poor marketing system/price	78	65.00

*Multiple response

Source: field survey 2018

Conclusion and recommendations

The analysis of rural women participation in *acha* processing, revealed age, education and marital status have significance influence on participation. *Acha* processing was found to be profitable as revealed by this study, therefore it has the potential of increasing processors income and providing enough food for the increasing population of people in Africa. However, there are inadequate, inefficient machines/equipment for processing of *acha*. This has negatively affected the production and processing of the commodity.

Thus, it is recommended government and well-meaning Nigerians should assist by providing modern machines for *acha* processing in order to reduce drudgery and encourage processing. Low interest rate credit facility should be made accessible to *acha* processors to enable processors to expand their business. More research should be conducted on *acha* processing and latest findings be communicated to the rural *acha* processors. Efficient and effective marketing system that will ensure stability of agricultural product prices be established to reduce losses incurred by the processors.

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Factors Influencing Passengers' Satisfaction: Evidence from Marina Ferry Terminus, Lagos, Nigeria



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Abstract: *This study analyzed passengers' perceived factors influencing satisfaction with ferry transport in Marina, Lagos State. The study adopted the survey research design. Primary and secondary data sources were used. The sampling frame evolved from a one-day ferry passenger count at the terminus as well as statistics from Lagos State Waterways Authority (LASWA) records; which amounted to 2,640 passengers. Kothari's Formula was used to derive the sample size (127). A purposive sampling technique was used in the administration of the questionnaire. Data were analyzed using descriptive (Likert Summation scale) and inferential statistics (Factor Analysis and Two-way ANOVA). Findings revealed that the major factor affecting ferry passengers' satisfaction on a 5-point Likert scale was waiting time (4.69) while the least was the availability of parking space (3.12). Factor Analysis revealed the KMO and Bartlett's Test as 0.927, Chi-Square of 1443.141 with 78 degrees of freedom. Short waiting time at the terminus had the highest communality with an extraction value of 0.913 while the speed of ferries had the least communality with an extraction value of 0.623. The rotated component matrix revealed that the major factors influencing ferry passengers' satisfaction were tangibles, attitudinal, and reliability respectively. The study concludes that there is a relationship between passenger satisfaction and regularity of ferry patronage using the two-way ANOVA. The study recommends the provision of more ferries, regular auditing of ferries to check for malfunctions, and the clearing of water hyacinth and debris on waterways to reduce passengers' waiting time.*

Keywords: Ferry; Factors; Marina terminus; Passengers; Satisfaction

Introduction

Transport remains the cornerstone of economic growth and development of a nation. Historically, as a means of engaging in transactions between two places, man has always relied on some form of transport. Most developed countries have over time built sustainable modes of transportation to forge new bonds and strengthen existing economic ties between trading nations. According to Ademiluyi, Afolabi and Fashola (2016), the importance of transportation cannot be over-emphasized as it is an integral part of the human economy and forms a basis for all socio-economic interactions. Ighodalo (2009) opined that there are several modes of transport for both people and goods and that these modes can be divided into four basic categories, namely; rail, road, air, and water. Water transportation, according to Bayode and Ipingbemi (2016), is one of the oldest modes of transportation and remains very crucial to the development of any nation. Ikya (1993) noted that water transport characteristics include the ability to carry a large number of people at a time, availability and

reliability, tourism promotion, the availability of free-flow traffic, and the ability to carry passengers quickly and safely from one point to the other. Despite the plethora of environmental and socio-economic advantages of water transportation, this mode has been under-utilized (Ezenwaji, 2010). To put this into context, India has over 14 thousand kilometres (14,000) of navigable waterways, but water transportation is still in its preliminary stage. Sierra Leone has eight hundred kilometres (800 km) of navigable waterways year-round. Lagos has a landmass of approximately 3,577sqkm, of which waterbodies constitute 22%, yet the water transportation sector has been moribund (Lagos Resilience Strategy, 2020).

Passenger satisfaction is considered to be an important factor whether as a product or a service. In the event of failure to satisfy customers, other industries offering the same services will replace the original service provider. Therefore, transport service providers need to be more proactive because there are a specific mindset and attitude which plays an important role in attracting and retaining customers (Khurshid, Naeem, Ejaz, Mukhtar and Batool, 2012). The underlying assumption is that the passenger's perception of service and the actual service delivered is what guarantees satisfaction. Therefore, to increase the level of patronage of public transport service, the system needs to design in a manner that matches or supersedes the level of service desired by customers (Beirão and Cabral, 2007). Hence, the study analyzes factors influencing passengers' satisfaction with ferry transport in Marina, Lagos State.

Literature Review

According to Brady, Cronin, and Hilt (2009), satisfaction is an effective overall response to the perceived discrepancy between previous expectations and perceived post-consumption performance. It can be defined as the degree that is believed to evoke positive feelings from the experience. Customer satisfaction is characterized as a judgment based on an experience with a particular service. It is the ultimate goal of service operations.

Al-Refaie, Bata, Eteiwi and Jalham (2014) examined factors affecting passengers' overall satisfaction and loyalty using Jordan Airport. The study investigated the effects of service quality, satisfaction with the service recovery, value, image, and price on passenger's overall satisfaction and loyalty. Findings revealed that in-flight services, reservation and ticketing, flight availability, reliability, employee services, airport services, and satisfaction with the website and e-services affect passengers' total satisfaction and that the overall passenger satisfaction affects subsequent behavioral and loyalty patterns.

Nwachukwu (2014) carried out a passenger satisfaction survey of intra-city public bus services in Abuja, Nigeria, and analyzed it using descriptive statistics, comparison, and regression analysis. The analysis revealed that the public bus services in Abuja did not satisfy passengers. The standardized coefficients of regression further showed that availability, comfort, adequacy of bus-stop facilities had the greatest impact on overall satisfaction.

Akinbamijo, Ipingbemi, and Bayode (2017) examined inland water-based transport in Lagos state: challenges and remedies. The study adopted a survey research design; both secondary and primary data were employed for the study. A Purposive sampling technique was used in the administration of questionnaires. The study revealed that 34.6% of the respondents complained of the presence of water hyacinth. 44.3% of the respondents complained of poor safety measures. 26.8% of the respondents suggested clearing of the water hyacinth.

Hence, this study tends to bridge locational and transport means gaps as the study conducted by Al-Refaie *et al.* (2014) was carried out in a European country. While the second aforementioned study was conducted on the bus means of transport and the third focused on the holistic challenges surrounding water transport in Lagos. Hence, this study is focused on water transport, with peculiarities on the reasons for passengers' satisfaction/dissatisfaction in Marina ferry terminus, Lagos State, Nigeria.

Theoretical Framework

Over the years, several scholars have used some form of comparison to model satisfaction. Some theoretical approaches which have been advanced amongst others include; attribution theory and the importance-performance model.

The Attribution Theory

This theory is primarily developed from Weiner, Frieze, and Kukla's (1971) work. This theory has been mostly used in dissatisfaction/ complaining behavior models than in satisfaction models. According to this theory, consumers are regarded as rational processors of the information who seek out reasons to explain why a purchase outcome, for example, dissatisfaction, has occurred (Folkes, 1984). This model argues that when the delivery of a service does not match customers' prior expectations or other standards, customers engage in an attribution process to make sense of what has occurred (Bitner, 1990). More specifically, this model assumes that consumers tend to look for causes for product successes or failures and usually attribute these successes or failures using a three-dimensional schema (Weiner *et al.*, 1971; Pearce and Moscardo, 1984; Oliver and DeSarbo, 1988; Folkes, 1989)

The Importance Performance Model

Satisfaction is seen as a function of customer perceptions of performance and the importance of that attribute. Based on the expectancy-value model, developed by Fishbein and Ajzen (1975), in which attribute importance and beliefs play a central role, Barsky (1992) posited that overall satisfaction/dissatisfaction toward a product/service are dictated by the importance of specific characteristics and the degree to which that product provides the specific characteristics. This model predicts that people generally have a belief about an attribute, but each attribute may be assigned important weighting relative to other attributes (*ibid.*). This implies that customers' satisfaction levels are related to the strength of their beliefs regarding attribute importance multiplied by how well these attributes meet their expectations (Barsky, 1992).

The attribution and importance-performance theories form the basis for this study. Having examined these theories each is used and applied specifically in the study. The attribution theory was used to establish the reasons for decreased satisfaction with the ferry services. And the importance-performance theory was used to establish the degree to which ferry facilities provides specific functions to passengers.

Methodology

Marina Ferry Terminus is located along Ring Road, Christian Missionary Society (CMS) at the south side of Lagos Island, and overlooks the Lagos Harbour. Across the harbor lies the industrial city of Apapa, which is six minutes' ferry ride away (Author Survey, 2019). The reason behind the selection of Marina Ferry Terminus was due to its prime location on the shores of Lagos Island, its high level of patronage, and the origin to various routes and destinations. Marina Ferry Terminus currently serves as the origin and destination to eight (8) routes in Lagos State. They are; Ajah - Five Cowries - Marina/C.M. S; Ebute Ojo – Ijegan

Egba - Marina C.M.S; Ijede - Marina C.M.S; Marina/C.M.S – Ikorodu; Marina/C.M.S – Liverpool; Agboyi Ketu - Marina/C.M.S; Marina/C.M.S - Oworonshoki; and Mile 2 - Marina/C.M.S (Lagos State Waterways Authority, 2019).

This study adopts the survey research design. It employs the use of both primary and secondary data sources. The secondary source of data for this study includes information from Lagos State Waterways Authorities (LASWA). The sampling frame for the study evolved from a one-day passenger count and statistics from LASWA. This entailed an inventory on the number of ferries (11) by the average number of trips daily (8) by the average number of passengers (30), amounting to 2,640 passengers. Kothari's Formula was used in deriving the sample size, which translated to 127 passengers who were surveyed. The purposive sampling technique was used in the administration of questionnaires to the passengers. This method was used because there is no pre-determined consistent population and passengers' chances of not being selected. This sampling technique was also used by Agunloye (2011). The study hypothesized that passenger satisfaction was a function of ferry patronage, and used the two-way ANOVA to test this hypothesis, while Statistical Package for Social Science (SPSS) version 23 was used in analyzing collected data.

Results and Discussion

A summation of factors influencing passenger satisfaction with ferry transport is presented in Table 1. Seventeen (17) variables were identified. The variables used for this study are in line with past studies carried out by Eboli and Mazulla (2007); Nwachukwu (2014); Onatere, Nwagboso and Georgakis (2016), and key transport performance indicators as identified by Krynauw and Cameroon (2003). Hence, these variables are established based on the Importance Performance Model. The passengers who rated the factors using any of the five Likert scales of strongly disagree, disagree, moderately agree, agree, and strongly agree were assigned weights of 1, 2, 3, 4, and 5 respectively. The closer the value to 5, the greater the level of influence it has on passenger's satisfaction. As shown in Table 1, the PAI for Marina Ferry Terminus was 4.21. From the analysis, variables having values lower than 4.21 imply that passengers consider such factors as minor and values equal and higher than 4.21 influences their level of satisfaction with ferry transport. Less waiting time at the terminus (4.49) had the highest index. This was followed by the affordability of ferry transport (4.36); the attitude of ferry staff (4.36); the attitude of ferry operators (4.32); responsiveness of staff to emergency and customer needs (4.31); the presence of debris and hyacinth on waterways (4.31); the speed of ferries (4.31), availability of ferries (4.28); safety equipment and personal protective equipment (PPE) in ferries (4.27); poor weather condition (4.27); the comfort of ferries (4.23); reliability of ferry services (4.22) and maintenance of ferries (4.22). While, customer care and professionalism (4.20); cleanliness of terminus facilities (4.15), availability of safety equipment and security measures at the terminus (4.15), and availability of parking space at the terminus (3.12) were perceived by passengers as having a minor influence on their level of satisfaction with ferry transport services. Also, variables 3, 4, and 5 (Table 1 refers) can be tied to the Attribution Theory.

Table 1: Factors Influencing Passengers’ Satisfaction with Ferry Transport

S/N	Factors Influencing Passengers’ Satisfaction	Opinion					SWV	PAI
		1	2	3	4	5		
1	Less Waiting Time at Terminus	-	2	-	58	67	571	4.49
2	Affordability of Ferry Transport	1	2	6	59	59	554	4.36
3	Attitude of Ferry Staff	1	2	6	59	59	554	4.36
4	Attitude of Ferry Operators	1	1	7	56	60	548	4.32
5	Responsiveness of Staff to Emergency and Customer Needs	-	4	6	64	53	547	4.31
6	Presence of Debris and Hyacinth on Waterways	-	4	6	64	53	547	4.31
7	Speed of Ferries	-	4	5	66	52	547	4.31
8	Availability of Ferries	-	2	12	62	51	543	4.28
9	Safety Equipment and Personal Protective Equipment (PPE) in Ferries	2	6	7	53	59	542	4.27
10	Poor Weather Conditions	2	6	7	53	59	542	4.27
11	Comfort of Ferries	-	8	6	57	55	537	4.23
12	Reliability of Ferry Services	-	4	11	65	47	536	4.22
13	Maintenance of Ferries	-	5	13	58	51	536	4.22
14	Customer Care and Professionalism	1	3	7	75	41	533	4.20
15	Cleanliness of Terminus Facilities	1	6	12	62	46	527	4.15
16	Availability of Safety Equipment and Security Measures at Terminus	2	5	16	53	51	527	4.15
17	Availability of Parking Space at Terminus	4	22	66	24	11	397	3.12
								$\Sigma=71.57$

Mean of $\Sigma PAI/N = 71.57/17 = 4.21$

Strongly Disagree (1), Disagree (2), Moderately Agree (3), Agree (4), Strongly Disagree (5)

As revealed in Table 2, the KMO = 0.927 which indicated that the sample was adequate and factor analysis could be carried out, while the approximate Chi-Square is 1443.141 with 78 degrees of freedom.

Table 2: KMO and Bartlett’s Test of Factors Influencing Ferry Passengers’ Satisfaction

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.927	
Bartlett’s Test of Sphericity	Approx. Chi-Square	1443.141
	Degree of Freedom	78
	Significant Level	.000

Source: Author’s Field Survey, 2019.

Rotated Component Matrix

The analysis in Table 3 showed the reduction in the number of factors in which the variables under investigation have high loadings. As observed, the factors were grouped under three components which were tangibles, attitudinal, and reliability. Factor 1 is categorized as **tangibles** (Appearance of facilities, personnel, and communication materials). This includes poor weather conditions (0.816), availability of safety equipment and security measures in ferries (0.816), availability of safety equipment and security measures in the terminus (0.774), comfortability of ferries (0.621), appearance of terminus facilities (0.629), the responsiveness of staff to emergency and customer needs (0.527), presence of debris and hyacinth on waterways (0.527) and maintenance of ferries (0.577). The second factor was categorized as **attitudinal** and included three variables namely; the attitude of terminus staff (0.600) and attitude of ferry operators (0.497). The last factor is **reliability** which includes waiting time at the terminus (0.172) and customer care and professionalism (0.105).

Table 3: Rotated Component Matrix

	Component Factors		
	Tangibles	Attitudinal	Reliability
Poor Weather Conditions	0.816		
Availability of Safety & Security Measures in Ferries	0.816		
Availability of Safety & Security Measures in Terminus	0.774		
Comfortability of Ferries	0.621		
Appearance of Terminus Facilities	0.629		
Responsiveness of Staff to Emergency and Customer Needs	0.527		
Presence of Debris and Hyacinth on Waterways	0.527		
Maintenance of Ferries	0.577		
Reliability of Ferries			
Attitude of Terminus Staff		0.600	
Attitude of Ferry Operators		0.497	
Speed of Ferries		0.503	
Cost of Ferry Transport			
Availability of Ferries			-0.080
Customer Care and Professionalism			0.105
Availability of Parking Space at Terminus			-0.661
Waiting Time at Terminus			0.172

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Hypothesis Testing

The two-way ANOVA of hypothesis testing was utilized in examining the relationships between the variables of satisfaction (responsiveness to emergency and safety) and ferry patronage. The analysis in Table 4 revealed that there was a statistically significant interaction at the $p = 0.496$ level. This implies that there is a relationship in mean regularity of ferry patronage between responsiveness to emergency and customer needs ($p = 0.217$) and the availability of safety equipment and security measures in the ferries ($p = 0.008$), since both independent variables, $p < 0.5$.

Table 4: Tests of Between-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	38.173 ^a	13	2.936	2.028	.024
Intercept	251.922	1	251.922	173.98	.000
Responsiveness to Emergency	6.542	3	2.181	1	.217
Ferry Safety	21.023	4	5.256	1.506	.008
Responsiveness * Ferry Safety	7.836	6	1.306	3.630	.496
Error	163.623	113	1.448	.902	
Total	1571.000	127			
Corrected Total	201.795	126			

- a. R Squared = 0.189 (Adjusted R Squared = 0.096)
- b. Dependent Variable: Regularity of Ferry Patronage

Conclusion and Recommendations

This study has provided an insight into factors that influence passengers' satisfaction with ferry transport in Marina, Lagos State. The inferential analysis using factor analysis revealed tangible, attitudinal, and reliability factors as key elements influencing passengers' satisfaction with ferry transport services in the study area. The study established that ferry transportation may not be the ultimate solution to road traffic problems in Lagos State, but an improvement would help in fostering an integrated, multimodal transport system. This study hopes to re-galvanize the commitment and efforts of the government in increasing attention towards ferry passengers' satisfaction, as this would go a long way in improving ferry patronage and ensure sustainable service provider-customer relationships.

The study recommends the regular auditing of ferries to check for malfunctions is imperative in maintaining a safe and comfortable passenger ferry system. Monthly routine maintenance of facilities, cleanliness, and condition is a necessity and prerequisite for satisfaction. The removal of debris and water hyacinth along waterways to improve ferry speed, Information boards depicting routes, schedules of routes, next turn, real-time information should be provided at the terminus. This will help in reducing uncertainty in the arrival of ferries and waiting time. This can be done by word of mouth if other methods are expensive. Also, waiting time can be improved upon by providing more frequent service in the availability of ferries. This will minimize passenger wait times. On staff attitude, regular professional training programs on how ferry operators and terminus staff should be adept at handling passengers' requests and complaints. Finally, the government needs to partner with ferry services corporations in enlightening the public on the safety and benefits of ferry transportation. This should be backed up by the implementation of an effective water policing system, as well as the adequate provision of safety equipment in ferries and PPEs such as fire extinguishers, life jackets

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Application of Indigenous Knowledge Systems (IKS) in Agricultural Extension and Rural Development Programmes/Projects in Nigeria



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Abstract: *Due to the abandonment of Indigenous Knowledge (IK) by the programme/project planners which lead to failure in development programmes in the rural areas most of the programmes in Nigeria are top-down approach which lack respect on the expertise of indigenous people and their indigenous knowledge which has been regarded as a major contribution to rural and agricultural development. This paper is a review on the application of IK in rural development programmes/projects through agricultural extension workers. From the review, the study found that indigenous people and indigenous knowledge are very crucial in the development process of any nation and no nation can develop without the respects of the indigenous knowledge and their natural resources. Documentation has unlimited practical utility in almost every activity of human life such as health, animal health, livestock management, food, agriculture, dye, religious ceremonies etc. It provides useful evidence in planning projects for conservation of biological diversity, sustainable uses of natural resources, indigenous health practices etc. It creates awareness among younger generation to resuscitate and renovate pride among the farmers. It was recommended that government should use bottom-up approach toward ensuring success in any rural and agricultural programmes/projects which identified the felt needs of the beneficiaries, the integration of IK with scientific knowledge can thus balance the economic and ecological dimensions of sustainable agricultural development and this could be achieved by more in-depth and participatory field research in rural areas is required to develop researchers integrated understanding and interpretation of the respective roles of scientific and indigenous knowledge.*

Keywords: Development; Projects; Felt needs; Indigenous Knowledge

Introduction

Indigenous Knowledge is an all-inclusive concept, which embraces all aspects of community knowledge and responses to other elements of creation which impinge upon their livelihood. According to Kolawole (2002) stated that rurality's to whom development efforts are directed

to, have their own body of knowledge that enable them arrive at decision which could help better their lots. Therefore, to ignore people knowledge is almost ensuring failure in development.

The people were guided by certain norms, belief and value systems. Most communities are now becoming more open to western education. The diffusion of Western Knowledge Systems into the traditional society through institutional influences has greatly impinged on the inner drive of older people to “transfer their knowledge and fanning skills to the next generation...”

According to Ugboma (2014) Indigenous knowledge is central to Africa’s development in all ramifications, particularly in rural communities. It is an important and effective resource in the life of rural Africa. Community, not only in the area of agriculture, medicine and science but also in the other areas such as education and cultural affairs.

However, IK is rarely considered and not properly mainstreamed into development projects, particularly in Nigeria. It has not been given the rightful position in the development initiatives (Ugboma, 2014). More importantly, rural people as custodians of this knowledge should be identified and encouraged.

Concept of Indigenous Knowledge Systems

The term Indigenous Knowledge (IK) is used synonymously with ‘traditional’ and ‘local knowledge’ to differentiate the knowledge developed by a given community from the international knowledge system. IK also refer to the knowledge that is unique to a given culture or society.

Therefore, there is no standard definition of IK because it means different things to different society but there is a general understanding of what IK constitutes. IK was regarded as ethno-science, folk knowledge, traditional knowledge, local knowledge, people knowledge and so forth. IK connotes the knowledge systems held by traditional communities and is based on their experience and adaptation to a local culture and environment. According to Owawumi and Oludare (2013) define IK as the knowledge by traditional community that is based on their experience and adaptation to local culture and environment which is relevant for development particularly in agriculture, medicine, arts, natural resources management, music and theatre.

United Nations Educational, Scientific and Cultural Organization (UNESCO) (2017) define IK as the understanding, skills and philosophies developed by societies with long histories of interaction with their natural surroundings. It informs decision-making about fundamental aspects of day-to-day life. It is integral to a cultural complex that also encompasses language, system of classification, resources use practices, social interactions, ritual and spirituality. IK is adaptive, cumulative, dynamic, holistic, humble, intergenerational, invaluable, irreplaceable, moral, non-linear, observant, relative, responsible, spiritual, unique and valid. According to Tharakan (2017) the main characterizing feature of an IKS is that its locally based, grounded in a particular culture and geography. IK can be considered as the cultural and technological product, or knowledge product, from a society or culture’s interaction and engagement with daily living. IKS was developed through daily engagement, trial and error to see what meets a particular community’s needs. Therefore, it is the IK of these communities that was the basis for the community’s technological development.

According to African Journal of Indigenous Knowledge Systems (2002) many African Indigenous Knowledge systems (AIKS) are now being documented and described because of its becoming the focus of study, especially as these indigenous practices pertain to development in the African context.

Application of Indigenous Knowledge Systems

The IK has been utilized in various ways in Nigeria by local people and it worked for them in solving day-to-day life particularly in the areas of agriculture, health, storage, processing, pre-conservation system, environmental management, erosion control, food preparation, bio-diversity conservation and so forth.

In Nigeria rural people use IK depending on the natural resources available to their area. The application/utilization of IK in Nigeria according to Ugboma (2014) include: -

- ❖ Use of pawpaw, guava, mango, neem, mahogany leaves and bark for the treatment of fever, cold and catarrh.
- ❖ Processing and preservation of cassava, yam, cocoyam, plantain, cereals in dry and grinded it into flour for traditional dish such as eba, tuwo, fufu, garin kwaki e. t. c.
- ❖ Food preservation for fish, meat and others.
- ❖ Traditional traps for fishing and hunting of wild or domestic animals.

According to Azoro *et al.* (2002) IK utilized by rural Nigeria were: -

- ❖ Mixed farming, mixed cropping, crop rotation and shifting cultivation helped tremendously in their bumper harvest.
- ❖ The different types of soap were made for bathing and washing using indigenous resources such as palm oil, palm kernel, palm fiber, potash and leaves ash.
- ❖ It is common knowledge that local people used in the process trying to scare away birds in rice fields, build a mock human being dressed properly and allowed stand at strategic areas in the rice field (Anaeto *et al.*, 2005)
- ❖ To control soil erosion problem, the local people use tie mounds and ridges across the slope as well as cover crops/grasses such as vetier.
- ❖ To maintain soil fertility, local people conserve the soil nutrients by adopting fallow system as well as shifting cultivation and crop rotation.
- ❖ Local people restore, maintain and advance the ecosystems and ecological processes by reserving some forest as no-go area for any activity.
- ❖ Local people often dye their chicks for the purpose of protecting them against the attack of the predators that would not recognize them as chicks.
- ❖ Planting of lemon grass near the termitarium and use of Dogon-yaro leaves (neem) to control or expel termites and other crop pests.
- ❖ Use of wood ash, potash on the treatment of stomach ache, catarrh; it is also effective against maggot and sucking insects.
- ❖ Garlic is used to control crop pests and cold problems.
- ❖ Cow urine/dung had been effective in the control of mealy bug, aphids, caterpillar, mites and fungus.
- ❖ The leaves and stalks of tobacco are used for control of crop pests.
- ❖ Application of the prolific and multifaceted neem tree in a broad array of rural sustainability practices such as health and agriculture (Tharaka 2017 as cited in NRC 1992).
- ❖ The spice turmeric has been utilized by indigenous communities in agriculture, animal husbandry, health and medicinal application such as ayurvedic medicinal practices, acupuncture and unani.
- ❖ Most of the farm tools in the Northern Nigeria such as hoe, rake, cutlass, digger, knife and so forth was made by (black smiths) local people using indigenous knowledge.

Indigenous Knowledge Systems in Agricultural Extension and Rural Development Programmes/Projects in Nigeria

Many IK were at the risk of becoming extinct on account of rapid changing natural environmental and fast pacing economic, political and cultural changes on a global scale. The practices vanish and disappear on account of the intrusion of foreign technologies.

IK is not fully utilized in the development process including sustainable agricultural development. This lead to the need of a new paradigm or shift which call for integration of IKS into extension education in order to help, protect, improve and sustain the people local knowledge by involving the local people into the programmes meant to develop them. The need for extension policy formulation would be very important to strengthen the relationship between research institution, extension agents and the local farmers. All these will contribute towards sustainable agricultural development in Nigeria.

According to Ray (2014) the principles of IKS in agricultural extension is that people everywhere have IKS which developed through generations of work experience toward solving their own problem at specific situation. Therefore, for any development programmes to succeed involvement of the local people and their knowledge is very crucial particularly in development activities from planning up to the implementation. In achieving this, the approaches and methods of promoting IK via extension services such as the extension participation approaches like Farmer Field School (FFS), Farmer Study Circle (FSC), Farmer Meeting Groups (FMG), Household Approach or Family Approach System, Focus Group Discussion (FGD) and Facilitation Cycle (FC) were all about agricultural extension (Madukwe, 2006 and Asiabaka, 2010). That is to say all these approaches and methods helps to make any development programmes to sustain and successful on account of full participation of the farmers, identifying the local people needs, set priorities and demand appropriate services.

Development Programmes and Indigenous Knowledge Systems in Nigeria

Since independence Nigerian development planned believed enormously that elimination of traditional practices would about rapid development but this has not been the case. Many cases have shown that development projects in many instances have left rural dwellers worse, such projects were the Bakolori Dam, the Challawa irrigation project, Oil and Gas Exploration in Niger Delta (Ekong, 2010).

The world has suffered and continues to suffer from a profound loss of indigenous peoples, rural groups and their knowledge about the natural world constructed from their intimate ties to land and nature (Hardison, 1993). This is the case with Nigeria as no change programme has ever factored in or utilized IKS in its planning and implementation of change programmes in agriculture and rural development. The loss of IKS in rural communities is as a result of its neglect by development planners and Nigerian Government. According to Hardison (1993) stated that this loss has been accompanied by neglect and marginalization of the practices, know-how and belief often figured as inferior forms of knowing to be replaced by universalized knowledge derived from the Western Scientific Tradition.

Scientific system and process seem rational and take logical sense in terms of resource use and profit maximization. IKS has great beauty, power and utility, attempts to ensure ecological balance, security for all and sustainability (Hardison, 1993). The imposition of scientific management regimes without the participation of local communities and the

incorporation of their knowledge systems has contributed to the weakening of rural structures in Nigeria.

Therefore, there is a growing national and international interest in corporation IKS such as Traditional Ecological Knowledge (TEK) into truly participatory approaches to development. UNESCO (2015) has a well-established programme on preserving traditional knowledge known as the Local and Indigenous Knowledge System (LINKS). This programme contributing to the framing of Millennium Development Goals (MDGs) of poverty eradication and environmental sustainability. The LINKS has been expanded and incorporated in the post-2015 development agenda i.e. Sustainable Development Goals (SDGs) to empower local and indigenous peoples in the aspect of environmental management by advocating and mobilizing their unique knowledge and practices in climate adaptation. Swiderska and Malmer (2016) stated that LINKS contributed to the safeguarding traditional knowledge within indigenous communities by reinforcing intergenerational continuity through development of educational resources, based on local knowledge.

The Way Forward for Rural Development Through Indigenous Knowledge System in Nigeria

The development programmes for rural and agricultural development have either totally failed or marginally succeeded due to neglect of IKS. Wang (2018) stated that the integration of IK with scientific knowledge is the way to form sustainable agricultural knowledge. Local farmers acquire and custom their IK based on their long-term farming experience. However, the integration of IK with scientific knowledge can thus balance the economic and ecological dimensions of sustainable agricultural development and this could be achieved by more in-depth and participatory field research in rural areas is required to develop researchers integrated understanding and interpretation of the respective roles of scientific and indigenous knowledge.

According Anaeto *et al.* (2013) integration refers to recognizing indigenous knowledge and attaching it for use in extension education to spread local content, increase the relevance of the information to local development as well as to record all relevant resources. Extension needs to go beyond technology transfer to developing skills and knowledge of farm families for sustainable agriculture and rural development promote advises (Madukwe, 2006). There should be a standard shift from the conventional method of technology transfer through training and visit, face to face contact as well as the top-down approach of generating technologies and innovations meant for farmers to the bottom-top approach which would see the farmer whose knowledge counts, as the focal point more than that of the scientist (Asiabaka, 2010). It is in the face of this that indigenous knowledge becomes convenient especially in its ability to promote sustainable development. Actions that aim to benefit the poor, need to consider indigenous knowledge in their design and implementation stages. This could be realized through new paradigms which tend to involve those who possess indigenous knowledge (small scale farmers' knowledge) in the development actions. The new paradigms use approaches and methods of promoting indigenous knowledge through participatory approaches like farmer field school (FFS), farmer study circle (FSC), farmer meeting groups (FMG), Household approach or family approach system focus group discussion (FGD), and facilitation cycle (Madukwe, 2006; Rajasekaran, 1993; Asiabaka, 2010). These approaches and methods bring about fuller participation of farmers groups and strengthen their capacity to identify their needs, to set priorities and demand appropriate services.

The bottom-up and participatory approaches should be applied and the felt needs of the rural people should be identified. The highly educated peoples should accept and enlighten the community about the important of IKS in agriculture, medicine, food preservation and so forth toward solving societal problems.

Conclusion

The rural people and their knowledge are very crucial elements in the development process and it has been established by this review that no nation can develop without the consideration and application of the rural knowledge and their natural resources such as water, land, forests and others. The IKS needs to be documented and fully utilized in the development process to ensure success and sustainable rural and agricultural development programmes in Nigeria. According to Pandey *et al.* (2017) stated documentation of their vital knowledge on different subjects is necessary before the old generation passes away. Documentation has unlimited practical utility in almost every activity of human life such as health, animal health, livestock management, food, agriculture, timber, dye, religious ceremonies etc. It provides useful evidence in planning projects for conservation of biological diversity, sustainable uses of natural resources, indigenous health practices etc. It grows awareness among younger generation to resuscitate and renovate pride among the farmers themselves (Girach, 2007).

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Housing and Infrastructural Conditions in Selected Peri-Urban Communities of Ogun State Nigeria



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Abstract: *Urbanization has over the years faced the challenge of meeting up with the housing needs of the city's inhabitants and migrants. A developing country like Nigeria has poor housing delivery that has been attributed to insufficient mechanisms and systems for land allocation, funding, mortgage institutions, and infrastructure. The study evaluated the existing conditions of buildings and infrastructures in peri-urban communities of Oke-Aro and Akute to enhance the provision of adequate housing units and basic infrastructures of these communities and to identify the stakeholders responsible for infrastructural provision and maintenance. Oke-Aro and Akute communities of Ogun State with 1420 houses and 1562 houses respectively are the study areas. The simple random sampling technique was used to administer 115 and 116 questionnaires in Oke-Aro and Akute respectively which makes it a total of 232, while about 150 questionnaires were completed and returned. The data collected were analyzed using descriptive and inferential statistics. The study revealed that basic infrastructures such as potable water, good roads, and good primary healthcare center are lacking in the study areas. It was also revealed that both communities do not have an approved layout design as at the time of this investigation and the residents only apply for building plan approval for documentation purposes, this, however, resulted in urban sprawl and substandard housing. The study recommends active participation of the state and local government in the provision of the primary infrastructure, provision of loans, and subsidizing construction materials with effective planning, monitoring, and supervision of housing and infrastructural delivery. This will enhance healthy living and improve housing conditions in the peri-urban areas.*

Keywords: Housing condition, Infrastructure condition, Peri-urban communities, Planning, Ogun State

Introduction

The world is becoming increasingly urbanized and as established by United Nations-Habitat (2008), half of humanity now lives in urban areas with more than 70% in Latin America, North America, and Europe. Urbanization has been a rapid and irreversible phenomenon that has over the years had the challenge of meeting up the housing needs of the city's inhabitants and migrants. According to UNHABITAT (2010), over thirty percent (30%) of the world's urban population are faced with the challenge of living in poor housing conditions in slums or are homeless. Housing is an intrinsic factor of human settlement which consummates the

primary needs and it also has an important impact on the quality of life, health, welfare, and productivity of man. It plays a crucial role in integrated physical and economic development, environmental sustainability, natural disaster mitigation, and employment generation as well as wealth creation (Boehm and Schlottmann, 2001; Erguden, 2001; UN-HABITAT, 2006). The housing problem is not peculiar to developing nations but also the developed countries. Housing challenges worldwide include the shortage of housing (qualitatively and quantitatively), homelessness, government short-sightedness about the needs of the people, access to building land, house cost concerning specification and space standard, as well as the high-interest rate of home loans. In Nigeria, causes of housing problems include poverty, high rate of urbanization, high cost of building materials, as well as rudimentary technology of building. The poor infrastructural state is another major urban challenge that is associated with housing (Omole, 2012).

The increase in population in the cities and urban areas has led to overcrowding, high rent of housing, shortage of housing, overstretched of infrastructural facilities, and high cost of land especially for the low-income earners. This has led to the movement of people to the peri-urban settlements of many large cities of the world especially in Lagos, Nigeria. This process first started in economically developed countries and later developing countries of the world. This demanded the development of new housing in city surroundings or areas known as the “Peri-urban” region. (Ivo Grgić *et al.*, 2012). Lawanson *et al* (2012) described that the characteristics of peri-urban interfaces indicate that peri-urban areas are outside formal urban boundaries and urban jurisdictions and the rate of development could not be matched by proper development and planning of the peri-urban zones, thus poor infrastructure development. Many peri-urban areas near the city Center are big becoming desirable destinations especially in the countries of higher economic development. Growth in urban population is one of the reasons for the development of peri-urban areas that has elements of “rural” and “urban” characteristics (Tacoli, 2006). The rapid growth of urban areas along their peripheries is a typical phenomenon of the urban landscape in developing countries, especially in Lagos.

Peri-urban settlements are confronted with varying challenges from the governance of the peri-urban in developing countries to non- clear-cut boundaries with different stakeholders pursuing contradictory goals. There is an institutional failure which translates to other challenges in Lagos peri-urban housing developments and ultimately impairs the characteristics of housing and infrastructure in Lagos peri-urban areas. Adell (1991) pointed out that poor spatial planning in the peri-urban is a contributing factor to hindered infrastructure development in the interface. Instead of the peri-urban areas being well planned with adequate infrastructure and housing conditions, they are faced with a myriad of challenges. This study, therefore, examined the housing and infrastructural conditions of the selected peri-urban communities of Ogun State Nigeria

Literature Review

Housing is an intrinsic factor of human settlement which consummates the primary needs and high impact on the quality of life, health, welfare, and productivity of man. It plays a crucial role in integrated physical and economic development, environmental sustainability, natural disaster mitigation, and employment generation as well as wealth creation (Boehm and Schlottmann, 2001; Erguden, 2001; UN-HABITAT, 2006). Housing is very crucial for social welfare as it is a form of protection from harsh weather conditions. Thus, it is very fundamental to the health and survival of man (UNHABITAT, 2010). It is one of the

indicators of a good standard of living to a person in terms of where one lives in the society, the location and type of housing unit determines and affects the status of a man in the community (Fadamiro, Taiwo and Ajayi, 2004). However, not only the physical structure is referred to as housing but includes the amenities, environmental and infrastructural facilities.

Many issues are associated with peri-urban housing, which is a result of a distorted land market. The degree of peri-urban infrastructure development is decided if peri-urban housing is state-led or private-led. That is the influence of the initiative and developers are enormous on housing in the interface (Wu and Zhang, 2012). It has been noted by several scholars such as Gough *et al.*, 2005; Malizia, 2005; Haider, 2006; Narain, 2009 and Chirisa, 2010) that urban slums and low-income peri-urban areas in developing countries are characterized by a general lack of infrastructure. Although Peri-urban is related to the growth of more cities outside the urban limits but still has a strong relation with city area. These areas reflect the demographic, physical, and occupational characteristics of both rural and urban places. Some other studies have focused on the various aspects of peri-urban regions such as Graham (2004), focused on peri-urbanization, Pismal *et al.*, (2000) focused on lifestyle and housing environment. Further studies like Somda, *et al.*, (2005) observed the institutional weaknesses in peri-urban regions. An important study by Manoomani *et al* (2011) reveals that peri-urban housing is influenced by nearby urban areas while the peri-urban regions located away from urban areas generally exhibit rural housing style. Ward (2005) identified that peri-urban housing is changing as urbanization is rapidly increasing in the peripheries of urban Center in the USA. He concluded that this change is brought about by the metropolitan growth into peri-urban.

The previous studies examined housing from the provision, infrastructure, and condition in urban centers. Despite the numerous studies but none investigated housing and infrastructural conditions in peri-urban settlements in a developing country. Hence, this study focuses on enhancing the existing housing and infrastructural conditions in peri-urban communities.

Study Area and Research Methodology

The study focused on Oke-Aro and Akute communities in Ifo Local Government Area of Ogun State because of their proximity to Lagos State. These are both fast-growing peri-urban areas exhibiting polycentric characteristics and such growth in population increases land expansion to peri-urban of the Ogun state along the Expressways and Railways. Because of its proximity to Lagos, the study areas were designated as a Development Pressure Area (DPA) by Ogun state. It is located within the tropical zone lying between 6° 47' north of the equator and 2°33' east and 3°18' east of the Greenwich Meridian. The study adopted a combination of the qualitative and quantitative research design. The data for this study was obtained through the administration of questionnaires to the household heads and the local government authority in the study areas. The sample frame of the study area is the households in Oke-Aro and Akute. From the pilot survey and the aid of Google Maps, 1420 and 1562 residential buildings were identified in Oke-Aro and Akute communities respectively. The Cochran (2004) model formula was used to determine the sample size, it is denoted by:

$$n = \frac{z^2 pq N}{e(N-1) + z^2 pq}$$

Where,

n = sample size

N = population size (the total households)

z = the value of standard variate at a given confidence level (1.96)

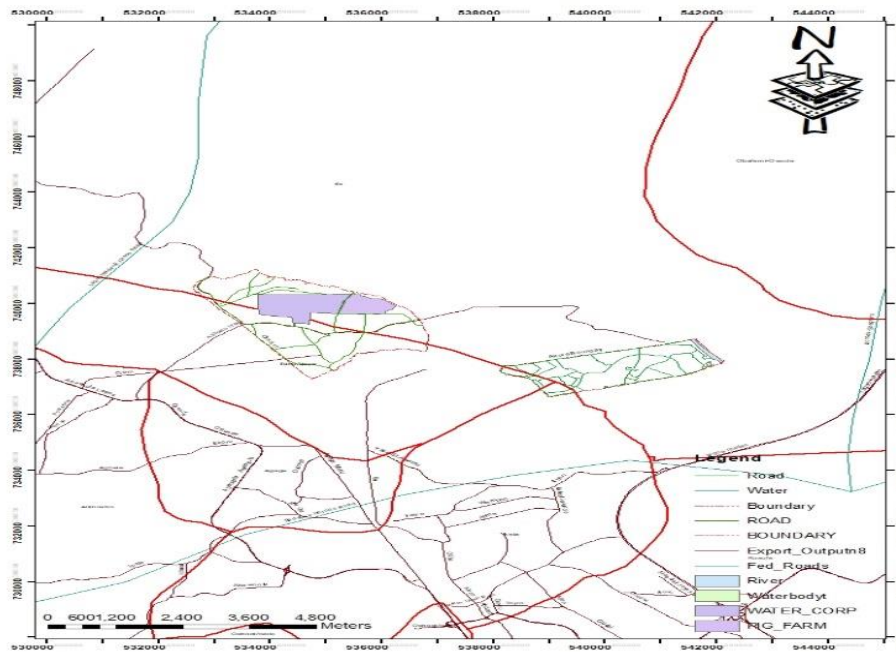
p = sample proportion (0.5)

q = $1-p$ (0.5)

e = reliability or level of precision. 0.06

For this study area, the total population (N) is the number of buildings for the communities and the acceptable margin of error to take is 0.06. Oke-Aro and Akute communities of Ogun State with 1420 houses and 1562 houses respectively are the study areas. A simple random sampling technique was used to administer 115 and 116 questionnaires in Oke-Aro and Akute respectively which makes it a total of 232, while about 150 questionnaires were completed and returned. The data collected were analyzed using descriptive and inferential statistics.

Oke-Aro and Akute Communities in Ifo Local Government Area



Source: Author Survey, 2018

Results and Discussion

Considering the marital status in the study area, Table 1 shows that 8.96% of the respondents are single in Oke-Aro and 8.54% in Akute. 53.73% and 74.39% are married in Oke-Aro and Akute respectively. 29.85% and 14.63% of the respondents in Oke-Aro and Akute are widows. The study revealed a larger percentage of residents in the peri-urban area in Ogun state were married and decided to continue their habitation. The educational level of the respondent was surveyed, findings show that 61.19% of the respondents in Oke-Aro have tertiary education certificates, and 84.34% in Akute, those that had a secondary school certificate are 26.87% in Oke-Aro while in Akute 14.46%. 10.45% of the respondents had primary school leaving certificates in Oke-Aro and 1.20% of the subjects are primary school certificate holders in Akute. During the survey, 1.49% of the respondent in Oke-Aro had an Adult Education student. Thus, it shows that the majority of the respondents are literates; this invariable is unconnected with the desire to settle in the peri-urban areas not minding the location. Further analysis on employment indicates that 17.91% of the respondents work in the public sector in Oke-Aro while 54.88% in Akute, 11.94%, and 15.85% of the respondents were engaged private sector in Oke-Aro and Akute respectively. 70.15% were self-employed

in Oke-Aro and 29.27% in Akute. This shows that there are more Civil servants in Akute than Oke-Aro because the majority of the respondents in Oke-Aro are self-employed.

The average monthly income level is used to determine the dominant income group in the study areas. 21.21% in Oke-Aro have an average monthly income between N18, 000 – N36, 000 while 2.41% in Akute, 49.40% of respondents in Akute earns between N36, 001 and N72, 000 while in Oke-Aro it was 6.06%. From N72, 001 – N144, 000 the respondents' responses are 37.88% for Oke-Aro and Akute was 31.33%. 15.15% of the respondents in Oke-Aro earn between N144, 001 and N288, 000 and in Akute 13.25% earn between monthly. And for the respondents that earn between N288, 001 and N576, 000 were 19.70% in Oke-Aro while in Akute the percentage was 3.61%. From the le above it indicates that the average income for both communities is between N36, 001 – N144, 000 monthly. The household size variable is used to determine the average number of persons per unit of a housing unit. 26.15% of the respondents in Oke-Aro have less than 5 people in their unit while in Akute the respondents' percentage is 74.39% because the majorities are working in the public sector. 50.77% in Oke-Aro have between 6 – 10 persons living in a single unit while 18.29% in Akute have the same number of persons living in a single unit. The respondents that have above 11 persons in a single unit of Oke-Aro and Akute are 23.08% and 7.32% respectively. Analysis on Table 1 shows the occupancy status of the respondents, 82.09% of the respondents in Oke-Aro were owner-occupiers while in Akute the 71.95% had the same status. 14.93% of the respondents were Tenants in Oke-Aro and 26.83% Tenants were the respondents from Akute. The Non-Paying Tenants are respondents who lived in their family houses with 2.98% and 1.22% in Oke-Aro and Akute areas respectively.

Table 1: Socio-Economic Characteristics

Marital Status

<i>Marital Status</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Single</i>	6	8.96	7	8.54	13	8.72
<i>Married</i>	36	53.73	61	74.39	97	65.1
<i>Widow</i>	20	29.85	12	14.63	32	21.48
<i>Separated</i>	5	7.46	2	2.44	7	4.70
Total	67	100	82	100	149	100

Level of Education

<i>Level of Education</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Tertiary</i>	41	61.19	70	84.34	111	74
<i>Secondary</i>	18	26.87	12	14.46	30	20
<i>Primary</i>	7	10.45	1	1.20	8	5.33
<i>Adult Education</i>	1	1.49	-	-	1	0.67
Total	67	100	83	100	150	100

Employment Status

<i>Employment Status</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Employed (Public Sector)</i>	12	17.91	45	54.88	57	38.26
<i>Employed (Private Sector)</i>	8	11.94	13	15.85	21	14.09
<i>Self-Employed</i>	47	70.15	24	29.27	71	47.65
<i>Unemployed</i>	-	-	-	-	-	-
Total	67	100	82	100	149	100

Household Size

<i>Household Size</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Less than 5</i>	17	26.15	61	74.39	78	53.06
<i>6 – 10</i>	33	50.77	15	18.29	48	32.65
<i>Above 11</i>	15	23.08	6	7.32	21	14.29
Total	65	100	82	100	147	100

Average Income

<i>Average Income</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>N18,000-N36000</i>	14	21.21	2	2.41	16	10.74
<i>N36,001-N72,000</i>	4	6.06	41	49.40	45	30.20
<i>N72,001-N144,000</i>	25	37.88	26	31.33	51	34.23
<i>N144,001-N288,000</i>	10	15.15	11	13.25	21	14.09
<i>N288,001-N576,000</i>	13	19.70	3	3.61	16	10.74
<i>Above N576,001</i>	-	-	-	-	-	-
Total	66	100	83	100	149	100

Occupancy Status

<i>Occupancy Status</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Owner Occupier</i>	55	82.09	59	71.95	114	76.51
<i>Rented</i>	10	14.93	22	26.83	32	21.48
<i>Non – Paying Tenant</i>	2	2.98	1	1.22	3	2.01
Total	67	100	82	100	149	100

Source: Author’s Field Survey

Housing Characteristics and Infrastructural Conditions

A satisfactory home is one in a suitable living environment with portable water, adequate shelter, and other services and facilities (Coker, 2007). The efficiency of any form of human activity system consisting of the urban area mostly depends on the provision of efficient infrastructural facilities and services (Babarinde, 1998). Hence, the importance of infrastructure in the proper functioning of any area cannot be dismissed. Infrastructure covers a wide range of facilities namely electricity, water, road, waste disposal communication, primary health service as the key ones, which are more often provided by the government.

Table 1.2: Housing Characteristics and Infrastructural Conditions**Building Material**

<i>Building Material</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Mud</i>	-	-	-	-	-	-
<i>Mud blocks</i>	-	-	-	-	-	-
<i>Cement blocks</i>	67	100	82	100	149	100
Total	67	100	82	100	149	100

Roof Material

<i>Roof Material</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Corrugated iron sheet</i>	37	55.22	50	60.98	87	58.39
<i>Asbestos</i>	30	44.78	32	39.02	62	41.61
Total	67	100	82	100	149	100

Wall Condition

<i>Wall Condition</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Plastered/Half plastered</i>	16	64	28	34.15	44	40.59
<i>Plastered and Painted</i>	8	32	52	63.42	60	56.60
<i>Not Plastered</i>	-	-	2	2.43	2	1.87
<i>Cracked</i>	1	4	0	-	1	0.94
Total	25	100	82	100	106	100

Roof Condition

<i>Roof Condition</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Good</i>	62	92.54	70	85.37	132	88.59
<i>Leaking</i>	5	7.46	11	13.41	16	10.74
<i>Patched</i>	-	-	1	1.22	1	0.67
Total	67	100	82	100	149	100

Structure Condition

<i>Structure Condition</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Physically sound</i>	51	76.12	60	73.17	110	74.32
<i>Need minor repairs</i>	16	23.88	16	19.51	32	21.62
<i>Need major repairs</i>	-	-	6	7.32	6	4.06
Total	67	100	82	100	148	100

Sewage Disposal (toilet)

Sewage Disposal (toilet)	Oke-Aro		Akute		Total	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
Pit latrine	25	37.31	19	23.17	44	29.53
Water Closet	42	62.69	63	76.83	105	70.46
Bucket latrine	-	-	-	-	-	-
Total	67	100	82	100	149	100

Bathroom Facilities

Bathroom Facilities	Oke-Aro		Akute		Total	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
Indoor Self-contained	44	65.67	68	82.93	112	75.17
Outdoor/Shared	23	34.33	14	17.03	37	24.83
Total	67	100	82	100	149	100

Kitchen Facilities

Kitchen Facilities	Oke-Aro		Akute		Total	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
Indoor Self-contained	44	65.67	68	82.93	112	75.17
Outdoor/Shared	23	34.33	14	17.03	37	24.83
Total	67	100	82	100	149	100

Source: Author's Field Survey

From Table 1.2, findings revealed that nearly all the respondents' houses were built with the use of cement blocks in both Akute and Oke-Aro. The result from the survey shows that a total of 55.22% of the respondents in Oke-Aro makes use of the corrugated iron sheet and also 44.78% in Akute. The asbestos roofing sheet was used by 44.78% of the respondents in Oke-Aro while in Akute the percentage of the respondents was 39.02%. Further analysis shows the wall condition of the respondent's buildings. 64% of the respondents in Oke-Aro have the walls of their houses plastered and in Akute 34.15%. 63.42% of the respondents in Akute have plastered and painted their walls and 32% in Oke-Aro have also painted their houses. 2% of the respondents in Akute have not plastered their units and the respondents with cracked walls in Oke-Aro constitute 4% of the subjects. The roof conditions in the study show that 92.54% of the respondents in Oke-Aro have good roof conditions while 85.3% in Akute. A total of 7.46% of respondents in Oke-Aro have leaked roofs and in Akute the percentage was 13.41%. Further analysis shows that 76.12% of the respondent's buildings in Oke-Aro are physically sound that is there are no minor or major cracks on their walls in Akute 73.17%. Table 1.2 shows that 37.31% and 23.17% in Oke-Aro and Akute respectively use the Pit latrines for disposal while the Water closet system is been used by 62.69% in Oke-Aro and 76.83% in Akute. This indicates that the water closet system is been used more in most parts of the communities. The indoor self-contained bathroom facility is a facility in which each household is opportune of having their privacy; 65.67% and 82.93% representing Oke-Aro and Akute communities respectively use this facility privately. 34.33% and 17.03% for Oke-Aro and Akute communities responded that they share this facility which is either indoor or outdoor.

A total of 75.17% from both study areas indicated they have their kitchen indoor and solely used by their household while 24.83% of both Akute and Oke-Aro indicated their kitchen is

either located outside the main building or it is been shared by the different households in their building.

Table 1.3 Infrastructural Condition

Water Sources/Location

<i>Water Sources/Location</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Bore-hole</i>	56	83.58	75	91.46	131	87.92
<i>Pipe-borne</i>	-	-	-	-	-	-
<i>Underground well water</i>	11	16.42	7	8.54	18	12.08
Total	67	100	82	100	149	100

Solid Waste Disposal Methods

<i>Solid Waste Disposal Methods</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Roadside</i>	9	13.43	14	17.07	23	15.44
<i>Open space</i>	8	11.94	16	19.51	24	16.11
<i>Private sector Participation (PSP)</i>	13	19.41	12	14.64	25	16.78
<i>Incinerating / burning</i>	37	55.22	40	48.78	77	51.67
Total	67	100	82	100	149	100

Road Condition

<i>Road Condition</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Untarred but in good condition</i>	-	-	-	-	-	-
<i>Untarred and dilapidated</i>	67	-	82	100	149	100
<i>Tarred but in disrepair</i>	-	-	-	-	-	-
<i>Tarred without drainage</i>	-	-	-	-	-	-
<i>Tarred with drainage</i>	-	-	-	-	-	-
<i>No walkways</i>	-	-	-	-	-	-
Total	67	100	82	100	149	100

Electricity Supply

<i>Electricity Supply</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Constant / Regular</i>	-	-	-	-	-	-
<i>Erratic/Irregular</i>	67	100	80	97.56	147	98.66
<i>Not available</i>	-	-	2	2.44	2	1.34
Total	67	100	82	100	149	100

Health facility

<i>Health facility</i>	<i>Oke-Aro</i>		<i>Akute</i>		<i>Total</i>	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
<i>Primary Health Centre</i>	67	100	82	100	149	100
<i>Comprehensive Health Centre</i>	-	-	-	-	-	-
<i>General Hospital</i>	-	-	-	-	-	-
Total	67	100	82	100	149	-

The result in Table 1.3 indicates that bore-hole is the major supply of water in both communities; 87.92% of the respondents have access to a bore-hole facility which is either individually owned or communally used. 12.08% of the respondents who do not have access to the bore-hole facility have access to Underground well water. Further analysis shows how these Peri-urban communities manage and dispose their solid waste. Findings showed that the respondents mainly engage in incinerating/burning of their wastes as it had a total of 51.67% from the study areas. 13.43% of the respondents in Oke-Aro dispose their solid waste by the road side while in Akute 17.07% engaged in this act. 11.94% and 19.51% of the respondents in Oke-Aro and Akute respectively make use of open spaces in disposing their solid waste. 19.41% and 14.64% of the respondents in both study areas engaged PSP in disposing the solid waste they generated. Waste management is a global environmental challenging issue that is severe especially in developing countries where increased urbanization, poor planning and lack of adequate resources contribute to the poor state of solid waste management. The road condition in the study areas were assessed from the respondent’s perception and through personal survey. Findings show that all roads in these communities are untarred and deplorable state. There are also no walkways and only a few have drainages by their side while others have no drainages. This depicts a typical peri-urban settlement with little or no government presence. The respondents’ perception on energy supply revealed, 98.66% of the respondents from both study areas indicated that the power supply in their communities is irregular/erratic while 1.34% indicated that power supply is not available. It is evident that the power supply in both study areas is not regular. Healthcare is the basic necessity of modern society. Healthcare embraces the multitude of services provided to individuals or communities for promoting, maintaining, monitoring or restoring health. Table 1.3 revealed that both study areas have only a primary healthcare center which the Ogun State Government provides.

Infrastructural Maintenance

Table 1.4 explained how the available facilities are being managed. About 69% of the Respondents indicate that the facilities are being managed by the community associations while 30.34% indicate that the maintenance is done by the State Government

Table 1.4 Facility Maintenance

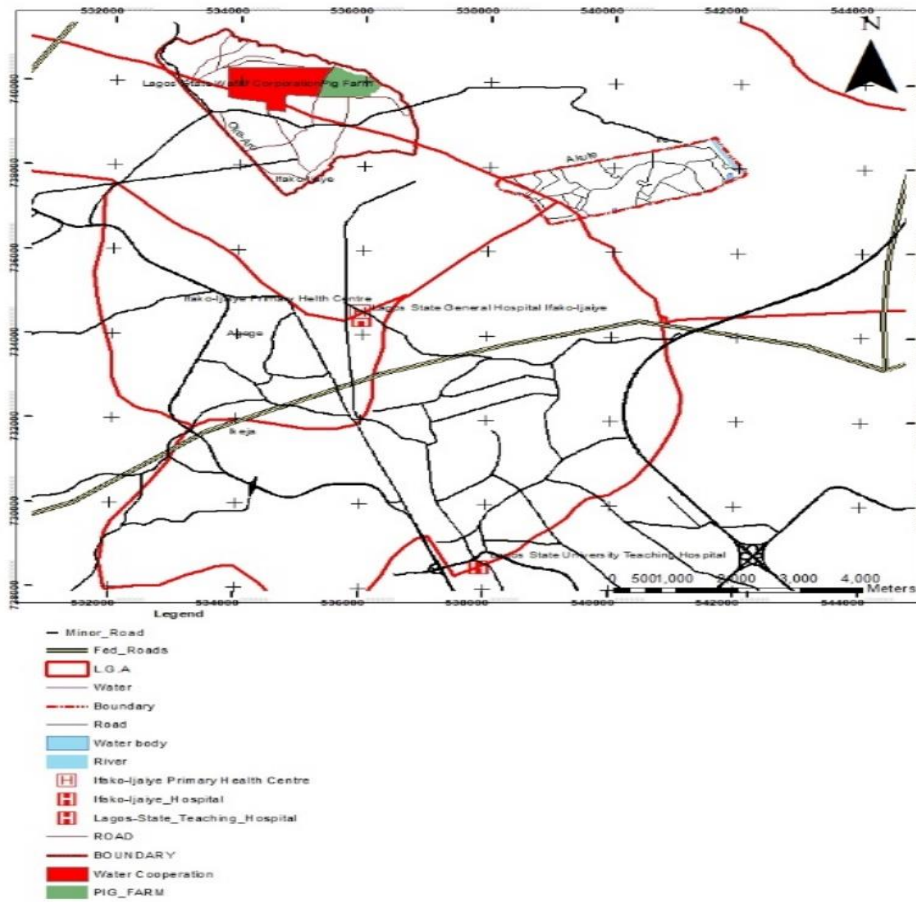
Facility Maintenance	Oke-Aro		Akute		Total	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
Individuals Residents	-	-	-	-	-	-
Contractors	-	-	-	-	-	-
Community Association Owners of the Buildings	40	62.5	61	75.31	101	69.66
Government agency	24	37.5	20	24.69	44	30.34
Total	64	100	81	100	145	100

Source: Author's Field Survey

The maintained facilities include the existing roads, health facilities, electricity. It is important to note that many respondents are not aware of any primary healthcare facility in their community as they prefer using private clinics around or the General Hospitals in either Ifako - Ijaiye or Ikeja, Lagos State. The Nearest Neighborhood Analysis in Figure 1.3 was used to determine the level of randomness and accessibility to the health facilities in Oke-Aro and Akute. From the analysis, the following was found about hospital locations; therefore, indicates a significant accessibility status.

Fig 1.2: Location Map of Health Facilities from the Study Area

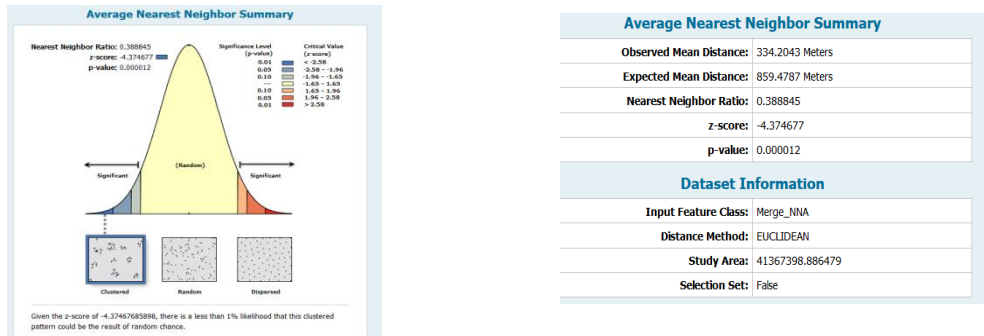
Source:



Author's Field Survey

The outcome of the spatial statistical analysis returned five values within the software interface: Observed Mean Distance, Expected Mean Distance, Nearest Neighbor Ratio, z-score and P-value respectively and then automatically calculated for the Local Government Area. The average nearest neighbor ratio by dividing the observed average distances by the expected average distances with expected average distances being based on a hypothetical random distribution with the same number of facilities covering the Local Government Area.

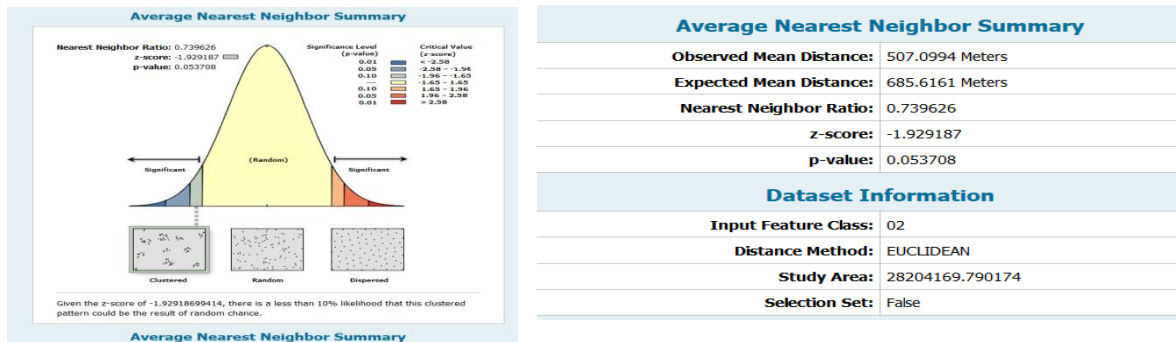
Fig 1.3: Average nearest Neighbor Summary from Akute to Ifako-Ijaiye General Hospital



Source: Author’s Field Survey

From the analysis, the following was found about hospital locations; Observed mean distance = 334.204 meters; Expected mean distance= 859.479 Nearest Neighbor ratio =0.389; Z-score = -4.37 Standard derivation P-Value = 0.000012; Significant level = 0 Critical value= -1.65 -1.65. Given the z-score of -4.37, the pattern does not appear to be significantly different than clustered. An output of 0.389 was found, an indication of weak randomness, because it exceeds the Z-score table value of -4.37, which is an indication of insignificant accessibility.

Fig 1.4 Average nearest Neighbor Summary from Oke-Aro to Ifako-Ijaiye General Hospital



Source: Author’s Field Survey

From the analysis, the following was found about hospital locations; Observed mean distance = 507.099 meters; Expected mean distance= 685.616 Nearest Neighbor ratio = 0.739; Z-score = -1.93 Standard derivation P-Value = 0.05; Significant level = 0 Critical value= -1.65 -1.65. Given the z-score of -1.93, the pattern does not appear to be significantly different than clustered. An output of 0.739 was found, an indication of weak randomness, because it exceeds the Z-score table value of -1.93, which is an indication of insignificant accessibility. Figure 4 reveals that there is less than 1% (0.01 level of significance) likelihood that the

spatial pattern of the distribution of health care facilities in Oke-Aro and Akute is dispersed and this could be as a result of clustered chance. This might as the result of the fewer health facilities. The Nearest Neighbor Analysis indicates that the spatial pattern of distribution of health facilities in Oke-Aro and Akute, Nigeria is clustered towards a particular section of Ifako-Ijaiye L.G.A. The reason for this contrast might be because Oke-Aro and Akute are Peri-urban communities with less physical development.

Conclusion and Recommendations

The Housing characteristics and infrastructural conditions of the study areas are characterized by housing units that have the basic facilities needed; some facilities are shared between residents of a housing unit. The average age of a building in the study areas was 15 years. The provision of water in both communities is done privately, even with the presence of the Lagos State Water Cooperation residents depend on the privately-owned bore-hole water supply because this public facility is not functional. Power supply in the study areas is erratic and irregular as residents rely on the alternative source of power which is the use of generators. From the findings, most respondents are not aware of the presence of the primary healthcare facility in their community as they either use private hospitals or travel to Lagos to get proper medical care at the Lagos State General Hospital, Ifako-Ijaiye, or Lagos State University Teaching Hospital, Ikeja. The majority of the roads in the study areas are deplorable which causes major traffic gridlock on the major roads, the roads are also not pedestrian-friendly. The infrastructural provision in the study areas was basically by State Government, Private Developers, and Community Association. The State Governments are to provide the basic infrastructure for sustainable living, rather there is evidence of abandoned road construction by the Government. The maintenance of the available infrastructural facilities in the study areas was been done by the community development association through the aid of community dues and contributions made. The only infrastructure that is maintained by the Government Agency is the Electricity cables and transformers. Transportation and telecommunication is been controlled solely by the private sector along with water supply and road maintenance is been done by the community. Primary Healthcare is been partially controlled by the Government because they are not well equipped.

To improve the livelihood of the residents in the peri-urban areas, there is a need to improve the housing and infrastructural conditions in their communities through proper planning and execution of projects to ensure environmental sustainability. The Government should provide the primary and basic infrastructure for communities, such as; water, access roads, waste disposal collection points; Government should provide financial support and encourage community development-initiated projects by providing subsidies and incentives.

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Micro-determinants of Household welfare in Nigeria: A spatial modelling approach



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Abstract: *This paper analyses the micro-determinants of household welfare in Nigeria, focusing on the role of educational attainment and its distribution among households. Using data from the 'Living Standards Measurement Survey' (LSMS, 2013) on Nigeria and applying spatial econometric technique, the paper shows how the household welfare is mainly affected by educational distribution and other demographic characteristics of the household. The spatial component appears to be non-negligible and, consequently, the conventional Least Square estimates suffer a bias due to spatial autocorrelation across the observations. In addition to the education variables, after correcting for the spatial dependence, other variables such as household size, occupation, urbanisation and the geographical location where the households reside are still very important for welfare determination. Therefore, investing in programs that ensure equal access to education and support for the poor people to improve their human capital endowments may be a very effective strategy in improving the welfare status of the population.*

Keywords: Education; Household; spatial autocorrelation; Theil index; welfare;

Introduction

Central to any economic policy and program is the welfare improvement of the populace. Thus, governments, especially in developing countries, have always been concerned with actions that could reduce the pain of poverty and enhance the welfare of their citizens. Poverty reduction is one of the core strategies towards achieving welfare improvement in the society. However, in order to predict the efficacy of any economic program on households' welfare, one should first understand which characteristics of households, and of the localities, in which they live, enable them to raise their standard of livings. Thereby, the challenge to reduce poverty requires in-depth studies of poor households' characteristics and determinants of poverty, which differ from country to country. Such an understanding can effectively guide the efforts of governments and other relevant agencies in assisting poor people and their communities to attain higher levels of wellbeing.

In 2018, poverty was projected at 50 percent indicating little improvement in incomes of the bottom half of the population over the past decade. The poverty trend only loosely follows macroeconomic developments due to high oil dependence, regional differences and a high population growth rate. The Sustainable Development Goals (SDGs) requires that the percentage of the population living in poverty to be below 22% by the year 2020. There is a substantial level of extreme poverty in Nigeria, with 50% of the population living below US\$1.9 per day (2011 Purchasing Power Parity). Henceforth, Poverty rate has not been declining in Nigeria despite the economic growth the country recorded over the last two decades. Despite the rapid economic growth, there is little or no progress in the level at which poverty is reduced in the country. While other growing economies such as Brazil, China and India have successfully lifted substantial number of their people out from poverty over the last decade (World Bank, 2018). Nigeria, on the other hand, is experiencing the reverse, as poverty incidence based on the international poverty line (living on less than US\$1.9 per day) has not been reduced and the trend is forecasted to remain the same (World Bank, 2018). Welfare analysis for Nigeria offers an interesting case study because the country is one of the top three countries that host the largest number of poor in the world. According to the World Bank president, Seven per cent of the world poor live in Nigeria, making it the third 'poor-host' country in the world while India ranked number one with 33 percent of the world poor. China is ranked second with 13 percent of the world's poor (Gabriel, 2014).

Spatial dependence has not been well modelled in the previous welfare studies and this constituted a methodological problem that might have biased the research findings. One of the potential problems associated with the usage of data collected across locations (space) is the presence of spatial dependence that translates to spatial autocorrelation; - the relationship between the values of some variables at one location in space and nearby values of the same variables (Anselin, Bera, Florax & Yoon, 1996). The existence of spatial autocorrelation in a data implies that geographically close-by values of a variable have a tendency to be similar on a map: high values tend to be spotted close high values; medium values close medium values, and low close low values. Most social science variables tend to be spatially auto-correlated as a result of the way phenomena are topographically sorted out. The purpose of this study is to account for spatial dependence in analysing the determinants of household welfare which has been ignored by previous studies.

Data and Methodology

The data utilized in this paper is from the Nigeria household living standards measurement survey (LSMS) for 2013, which was collected by the country's National Bureau of Statistics with technical support from the World Bank and made available on the World Bank database. This survey covered 5000 households nationwide. The sample of the survey is drawn using stratified two-stage random sampling procedure ensuring representativeness regional dimensions, as well as the urban and rural divide of the country.

Following Wodon, 1999 and Wan & Zhou, (2005) the determinants of welfare can be evaluated based on the following specification:

$$\log(y_i) = X_i' \beta_i + D_i + u_i \quad (1)$$

Where $\log(Y)$ is a log of real household expenditure per capita; and X is a vector of variables representing the characteristics of households which likely affect the expenditure per capita. The D is a regional dummy (1 for the southern region, zero otherwise); β is a vector of coefficients; and u_i is the error term. Subscript i stands for individual household head ($i = 1 \dots N$). the variables explaining the welfare in the above specification (Eq. 1) include

demographics, employment, and education categories. The category of demographic variables includes, gender, age and household size (hhsz; number of dependents of less than 25 years excluding the spouse). The employment variables includes dummy for the primary occupation or industry of the head of household (Inddmy; 1 for agriculture and 0 otherwise) and for the head of household living in the urban or rural sector (sector; 1 for urban, 0 otherwise). The education category consists of the level of educational attainment of the household head measured by average years of schooling and the measure of educational distribution (inequality) using Theil index.

Per capita expenditure is chosen rather than income as a proxy for household welfare. This is because of the suggestions in the literature that the expenditure is a good proxy for permanent income and also for long-term average well-being of an individual or group (Li & Xu, 2008; Balisacan, Pernia & Asra, 2003). For example, a low-income family unit can withdraw its savings or obtain a loan to spend in order to keep up its relative living standard. In contrast, a high-income but indebted family unit need to cut part of its income to pay off the obligation. Additionally, information on consumption is less hard to assemble than those on income, particularly in the developing nations where self-employed people are hesitant to reveal their income unequivocally. Along these lines, in this study, as outstandingly used in the previous studies, per capita household expenditure is utilized as an approximation for household welfare.

Spatial Regression model

Space has dynamically been co-picked into econometric modelling through the usage of theories and estimation procedures that formally recognize the role of geography in understanding economic phenomena (Anselin, Bera, Florax & Yoon, 1996). These procedures allow for the testing of models that in cooperate the effects of geography, or specify the impact of inter-dependence between observations at different points across geographical locations. The role of space in determining territorial economic performance has been recognised and being used in regional economic studies by many researchers (as in Trendle & Pears, 2004; Rey, 2004 etc.).

Spatial analysis always employs statistical inference-based models to analyse economic phenomena (Anselin, 1988; LeSage & Fischer, 2008). And the validity of the models depends upon the rightness of the set of assumptions about the models' error term. One main assumption states that individual error terms come from a population whose observations are thoroughly mixed through randomness (Anselin, 1988). Thus, the likelihood of a value taken on by one of a model's error term entries does not influence the likelihood of a value undertaken by any of the remaining error term entries (i.e., the assumption of independent observations in classical statistics). The presence of spatial autocorrelation in Geo-referenced data disregards this assumption.

To overcome the problem highlighted above (if found to exist), a spatial regression analysis is used. This involves a range of operations to construct spatial weights, using either boundary files (contiguity based) or point locations (distance based), and then testing for spatial autocorrelation and the identification of the model that best describes the data set in use. Following the spatial econometric literature, the analysis begins with a non-spatial linear regression model utilizing the OLS procedures that have been utilized in many cases within the scope of the empirical examination of regional economics with cross sectional data, and afterward to test whether the models need to be stretched out to incorporate a spatial interactive effect. The examination involves evaluating if spatial dependence

(autocorrelation) is available in the residuals of the specification that will be estimated using OLS, and assuming this is the case, whether it is best represented by a spatial lag or spatial error model. As pointed out earlier on, if spatial dependence is present, OLS estimation is no longer valid because it will yield biased and inefficient coefficients of the estimators, this holds whether the spatial dependence operates in the dependent variable (spatial lag) or in the disturbances (spatial error). In such a case, Anselin, (2002) notes that spatial autoregressive models (i.e. models with spatial effects) require a specific estimation strategy, such as maximum likelihood or instrumental variables.

Following Elhorst, (2010) this paper considered both the spatial lag and spatial error models. Thus, a general form illustrating the consideration of both the cases of spatial dependence could be illustrated by a spatial autoregressive model given as:

$$y = \rho W y + X \beta + \varepsilon \quad (2)$$

$$\varepsilon = \lambda W \varepsilon + \mu, \quad (3),$$

where ρ and λ are spatial autoregressive coefficient and spatial autocorrelation coefficient respectively. ‘ W ’ is an exogenously determined weight matrix that illustrate the spatial structure of units, ‘ ε ’ is a vector of independently and identically distributed disturbances. X denotes an $N * K$ matrix of exogenous explanatory variables, with the associated parameters β contained in a $K \times 1$ vector. And y is the dependent variable.

Results

Regression Results (OLS)

The OLS regression results of the specification of equations (1) are reported in Table 1. The table contains the statistics of the econometric estimation of the model such as parameter estimates, standard errors, probability values, R-squared, etc. The explanatory variables explain approximately 29% of the variation in welfare level in Nigeria. If one were to assume unbiased standard errors- no spatial dependence (autocorrelation) and non-spherical error (Heteroskedasticity) problems, then, the results of the OLS estimation reveal the following. Six variables, out of the seven independent variables used in the baseline model have yielded the expected signs at the 1 % level of significance. The results have confirmed the conclusions of our analytical framework that economic and demographic factors, such as, education level, GDP per capita, household size, urbanization and occupation are very important for welfare determination. The elasticity coefficient on educational attainment (schooling) is positive and significant, as expected, this highlights the importance of education in wellbeing determination.

Table 1:
Regression Results with Log per Capita Income as Dependent Variable

Variable	R ²
gender	-0.0042 (0.0143)
Ageing	0.0004 (0.0003)
inddmy	-0.0717*** (0.0112)
Urbanization	0.118*** (0.010)
HHsize	-0.0306*** (0.0018)
Edu	0.0199*** (0.0009)
income	2.83e-06*** (6.04e-07)
theil	-0.148*** (0.0329)
Constant	4.867*** (0.0272)
Observations	4,979
R-squared	0.290

NOTE: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Specification Diagnosis of the OLS Estimation

However, to ascertain the validity of the estimated OLS results, some post estimation statistics are used to test for the existence of potential misspecification problems in the estimation. These include; Multicollinearity, non-normality and Heteroskedasticity.

Table 2:
OLS Regression Diagnostics

Tests	Df	Value	Prob.
Multicollinearity Condition Number:	a	17.862	na
Test on Normality Of Errors:			
Jarque-Bera	2	3372.25	0.00
Test for Heteroskedasticity:			
Breusch-Pagan test	7	44.269	0.00
Koenker-Bassett test	7	15.464	0.03

Source: Author Generated

From Table 2, it could be seen that the residuals of the baseline regression model are clearly non-normal as shown by the lower probability value of the Jarque-Bera test statistics. This could put the OLS estimates under suspect, especially when one is dealing with a small sample size. This may not be too serious a problem here, since many properties in regression analysis hold asymptotically with large sample size (Bowerman, O'Connell, Orris & Porter, 2008; Gujarati, 2012). In and of itself, the sample size used in this study is large enough to overcome this limitation. The Multicollinearity Condition Number (MCN) shows no problem of multicollinearity as the number is found to fall below the alarming threshold level (i.e. 30) recommended by Anselin, (2008). Similarly, the values of tolerance and VIF for each independent variable were all within the threshold of 0.10 and 10 respectively, as recommended by Acock (2008); as such multicollinearity did not pose any problems among

the regressors in the baseline equation of this study. As regards to the problem of heteroskedasticity, both the Breusch-Pagan and Koenker-Bassett tests point to the existence of heteroskedasticity in the data set. This is indicated by the lower probability values of the tests as shown in Table 4.12. This does not come as a surprise because it usually occurs in a cross-section data set where the error variance could well be affected by the spatial dependence of the observational units in the data. As asserted by Anselin, (2008), the presence of heteroskedasticity in a dataset may point to the need for a more explicit incorporation of spatial effects, in the form, for instance, of spatial regimes. As such, there is a strong motivation, in this study, to further consider the investigation of spatial dependence and model it if it is found in the data set.

The results of the spatial autocorrelation diagnosis are presented in table 3.

Table 3:
Diagnostics for Spatial Dependence

TEST	MI/DF	VALUE	PROB
Moran's I (error)	0.003	12.686	0.000
Lagrange Multiplier (lag)	1	44.793	0.000
Robust LM (lag)	1	452	0.000
Lagrange Multiplier (error)	1	45.044	0.000
Robust LM (error)	1	32.703	0.000
Lagrange Multiplier (SARMA)	2	77.496	0.000

Source: Author Generated

The second row of table 3 reports the result of the 'Moran *I*' test with a t- value of 12.686 and a probability value lower than one percent ($p < 0.001$) which supports the hypothesis of spatial dependence as indicated by its lower probability value. This suggests that the residuals from the OLS estimation are spatially auto-correlated and OLS is no longer helpful. While the test has a strong predictive power and perhaps it is the most commonly used specification tests for spatial dependence, it provides no information on whether the spatial dependence is from the dependent variable that will best be handled by spatial lag model, or it is an error process that will be best represented by a spatial error model. To this end, the LM tests are used- the tests that help to distinguish the true spatial process and point the alternative specification to be used (Anselin, 2008). In this case, as shown in table 3, both the LM lag and the LM error are all significant, having probability values less than one percent, therefore confirming the presence of spatial autocorrelation but, still with no further suggestion on which spatial model specification will best suit the data. To understand which type of spatial dependence may be at work in the data, the robust LM tests should be considered. The robust measures for both the RLM error (32.70; $p < 0.001$) and the RLM lag (32.45; $p < 0.001$) are all significant, meaning that, even when a lagged dependent variable is present, the error dependence still persists (Anselin, Syabri & Kho, 2006). In the instance that both the robust LM tests are significant Anselin (2008) suggests that, the model with the largest value of the test statistic should be estimated. Thus, from table 3, the slightly higher value of the robust LM error test seems to suggest for the use of a spatial error model as the most appropriate specification.

Model Estimation: Spatial Regression

Following the outcome of the diagnostic tests presented in table 3, the spatial error model is the most appropriate specification to be estimated. This is carried out using GMM estimation technique as recommended by Anselin, Amaral and Arribas-Bel, (2012). The model is the standard regression specification with a spatial autoregressive error term and the model is represented as: $y = X\beta + e$, with $e = \lambda We + u$, where y is a vector of observations on the

dependent variable, W is the spatial weights matrix, X is a matrix of observations on the explanatory variables, e is a vector of spatially autocorrelated error terms, u a vector of *i.i.d.* errors and λ and β are parameters. Additionally, we have included in the estimation a robust estimator, proposed by Kelejian and Prucha (2010), of the covariance matrix (using a command available in GeoDaSpace software) that takes care of the persistent presence of both spatial Heteroskedasticity and autocorrelation (KP-HET). As done for the diagnostic spatial autocorrelation tests, the Distance-decay weight matrix (row standardized) is used for the models' estimation, and the results are presented in Table 4

Table 4:

Spatial Error Models with Log per Capita Income as Dependent Variable

Variables	Sreg2	
<i>Lambda</i>	-0.204***	
	(0.04)	
<i>Constant</i>	4.780***	
	(0.032)	
<i>income</i>	0.0001***	
	(0.000)	
<i>Ageing</i>	0.0004	(0.0003)
<i>Gender</i>	-0.007	(0.0142)
<i>Hhsize</i>	-0.031***	
	(0.0017)	
<i>Industry_Dummy</i>	-0.069***	
	(0.011)	
<i>Edu</i>	0.019***	
	(0.0009)	
<i>urbanisation</i>	0.115***	
	(0.0099)	
<i>Theil</i>	-0.129***	
	(0.032)	

NOTE: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The spatial error coefficient (Lambda ' λ ') appeared as an additional indicator in the model. The coefficient parameter (λ) reflects the spatial dependence inherent in the sample data, measuring the average level of dependence among observations. In other words, the parameter captures the average influence on observations by their neighbouring observations. As shown in table 4, its estimated coefficient has a positive effect (-0.204) and is significant at 5% (p=0.04) indicating the leftover spatial dependence, but that has been taken care of by the Kelejian and Prucha (2010) Heteroskedasticity and spatial autocorrelation robust standard errors (KP-HET) in the estimation.

Usually, it is expected that people involved in white collar jobs or business work as well as skilled labourers have a higher standard of living compared with those engaged in agricultural and blue collar jobs. The findings of this study support this expectation. As shown in Table 4, individuals living in households with a head who is in the agriculture had a lower expenditure per capita compared to those in a white collar job or a job related to sales/services. As Table 4 shows, education of the household head, level of income, urbanisation are statistically significant determinants of household welfare.

Conclusion

The household characteristics associated with better demographics such as a low number of dependants, urbanisation, the type of occupation, educational attainment and its distribution

are associated with a higher standard of living in Nigeria. Specifically, educational attainment, educational distribution and household size are found to play more important role in explaining the welfare gap between households in Nigeria. It is found that the rural areas lag behind the urban areas in terms of welfare. The concentration of people with better endowments in the urban areas could be a result of internal migration when people move into the urban areas where their skills are most rewarded and because of the inherently different economic structure.

The findings of this study emphasize the role of household characteristics in determining the welfare level of households in Nigeria. Therefore, investing in programs that ensure equal access to education and support poor people to improve their human capital endowments may be a very helpful strategy. This will give the poor households a chance to search for better opportunities regardless of their area of residence. Further investigation is required to identify the geographical factors that are responsible for low level of wellbeing in the rural areas and how these factors will be turned around to improve the welfare level of the rural areas.

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Perceived Consequences of Improper Pre-Retirement Planning of Employees at the Timber Industry Development Division, Forestry Commission, Takoradi, Ghana



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Abstract: *This study aimed at examining the perceived consequences of improper pre-retirement planning among employees: Timber Industry Development Division, Forestry Commission, Takoradi, Ghana. This research work employed descriptive research and quantitative as its research design and research approach respectively. The study targeted employees from the age of 35 years and above. This made the population to be 200 with a research sample of 132 respondents. The study also adopted a simple random technique. The results showed that the most influencing factor that affects employees' pre-retirement planning is their job satisfaction. The results also disclosed that employees of Timber Industry Development Division perceive some number of consequences such as ill-health, poor living standards, high dependency, among others. It was recommended that Government should put in place a policy that would compel all organizations and institutions to organize retirement seminars for their employees to plan ahead for their retirement.*

Keywords: Employees; Planning; Pre-retirement; Retirement

Introduction

Retirement is a period of rest from the stress and exertion from work. This offers retirees the opportunity to spend quality time with family and significant others (Asamoah, 2012;

MacBean, 2007). Hence, it is expected of retirees to have laid the foundation for financial stability, so that pension income can act as a back-up (Asamoah, 2012; MacBean, 2007). MacBean (2009) further explained retirement as a state (with no connection to the labour force or a life-long occupation), or it could be viewed as a process of gradually reducing labour force activity.

However, the reality today is different. Most retired people are poor, needy, and destitute, and are dependent on the meager payment from the pension scheme which they often struggle every month to draw (Nsirimobi & Nguwede, 2005). Ervin, Faulk, and Smolira (2009) aver that few retirees can sustain enormous challenges associated retirement when planned adequately towards it. Retirement can also disappoint, because it fades into the fourth age or “deep old age” of disability and physical decline as a result of ill-health (Ervin, Faulk & Smolira, 2009). Indeed, at this stage of life in retirement, there arises the expense of long term care, for which one needs to plan effectively and save, yet this form of consumption remains quite invisible in the lifelong promotion of retirement.

According to the World Population Bureau (2010), most African countries, including Ghana, have an increasingly aging population. It is estimated that over the next 35 years, the proportion of the world population that will be over 60 years will nearly double from 9% to 17.8%. In less developed countries, including Ghana, World Bank projections indicate that persons who attain age 65 and over will increase from 245 million in 2015 to 564 million in 2025. This alarming situation compels retirees to deal with the problem by adopting negative practices including drinking and regular staking of lottery, which worsens their situation (Jackson, 2009).

In Eastern and Central Europe where the effective retirement age is 57 for men and 53 for women, the proportion of the aged in the population has been increasing at a time when there is a strong trend towards early retirement (Ross & Wills, 2009). In Turkey, many people retire below the age of 50 or even 40. Public sector employees in many countries can retire at 55 or earlier (Ross & Wills, 2009). This is because they plan effectively towards their retirement. The situations are quite different in Ghana where the retirement age is at 60 for both men and women, yet there is little or no effective plan towards retirement.

Problem Statement

Globally, some of the most intricate decisions undertaken by ordinary individuals’ concern financial issues and freedom, such as the determination of retirement income needs, or the allocation of resources to alternative investments (Bayer, 2017). Most individuals make these decisions on the basis of their own decree, rather than with the help of experts, in large part because the market for financial expertise is imperfect (Bayer, 2017). It is, therefore, conceivable that appropriate forms of education may improve the quality of personal financial and factor decisions of retirement. This possibility has led the United States Department of Labour to launch “a national pension education program aimed at drawing the attention of American workers to the importance of taking personal responsibility for their retirement security” (Berg, 1995).

On the contrary, many scholars, including Appiah-Ansong (2014), Asamoah, Sefakor, and Larbi (2019), asserted that in peripheral countries, like Ghana, there is no such thing as national pension education program to sensitize workers about retirement planning. However, some organizations, such as University of Ghana, Ghana Commercial Bank, Ecobank Ghana, Social Security and National Insurance Trust, Ghana Ports and Harbour and Volta River

Authority, have taken up the initiative to organize Retirement Planning Programs (RPPs) for their workers to educate them on retirement issues and the need to make preparations towards it. Such initiative creates some positive feelings between unions and management and increases trust between employees and management (Appiah-Ansong, 2014). Though RPP is quite new in the Ghanaian system, it is a good initiative that should be encouraged and practiced by every organization (Appiah-Ansong, 2014).

It appears to a casual observer that some retirees in the Timber Industry Development Division of the Forestry Commission, Takoradi, Ghana live destitute life without having accommodation for themselves, battling with health-related issues and confronted with financial challenges as a result of lack of proper planning. According to Ervin, Faulk and Smolira (2009), one's letter of appointment also indicates his/ her retirement date in advanced countries. This makes it easier for the workers to better plan towards retirement. Due to its absence in peripheral countries, like Ghana, it makes it difficult for workers to plan their lifestyles when they are approaching retirement. There is no clear cut policy on retirement in Ghana (Asamoah et. al, 2009).

It is in view of this, that this study sought to examine the perceived consequences of improper pre-retirement planning at the Timber Industry Development Division (TIDD) of the Forestry Commission of Ghana.

Literature Review

Planning Towards Retirement

In a study by Stein et al. (2000), it is revealed that older workers remaining in or returning to workplaces mentioned not planning wisely, the need to contribute, appreciation from others, and the desire to create something as reasons for not retiring from the workplaces. For such people they have not been able to adjust to the realities of retirement. Work is more than earning a living. It is a way to live. To some extent, older workers remain in the workplace because they are healthy, cognitively able and want to remain engaged. Rix (1990) thus concluded that many aging workers continue to work at peak efficiency.

Subsequently, some studies have shown a stronger negative relationship between age and work performance for non-professional and low-level clerical jobs than for higher-level craft, service, and professional jobs (Legrand, 1999; Ervin, Faulk & Smolira, 2009; Jackson, 2009; Ross & Wills, 2009). There are many reasons why people do not prepare adequately for retirement. Fore (2003) and Aaron (1999) found that some people are incapable of solving the complex problems associated with rational retirement and saving behavior. Some may simply be denying the problem or overestimating the value of their future pension benefits and, as a result, has an overly optimistic view of their lifestyle in retirement (Elder & Rudolph, 2000).

Conceptual Framework

This study focuses on perceived consequences of improper pre-retirement planning on employees of the Timber Industry Development Division, Forestry Commission, Takoradi, Ghana. The conceptual framework of this study is based on factors that affect pre-retirement planning and the consequences associated with it. The factors to be considered that affect pre-retirement planning are income, number of dependents, education and financial education.

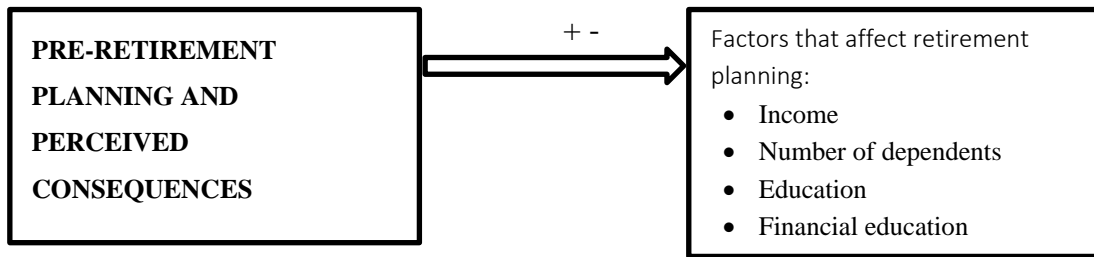


Figure 1: Conceptual Framework – Pre-Retirement Planning and Perceived Consequences and factors that affect retirement planning.

Source: Authors' Construct (2020)

Figure 1 above shows the factors that affect pre-retirement planning. The various elements (income, number of dependents, education and financial education) may have impact on the worker planning for retirement. The positive and negative (+/-) signs indicate that those factors can positively or negatively affect pre-retirement planning.

Theoretical perspective

The theory that underpins this study was the theory of planned behaviour. This theory was propounded by Bandura (1977) and it posits that people's behaviour does not just occur in a vacuum, but rather these behaviours are shaped by the society in which one finds him or herself through socialization. This means that social learning would play a vital role so far as this study is concerned. At the same time, it would inform other policy makers about the importance of taking into consideration attitude or behaviour towards retirement planning as a product and not as an individual matter.

Social Learning Theory considers the formation of one's identity to be a learned response to social stimuli. It emphasizes the societal context of socialization rather than individual mind. This theory postulates that an individual's identity is not the product of the unconscious (such as the belief of psychoanalytic theorist), but it is the result of modeling oneself in response to the expectations of others. Behaviours and attitudes develop in response to reinforcement and encouragement from the people around us. This implies that human actions are learned from others in a social context. Linking this theory to this study, when employees of the Timber Industry Development Division, Takoradi, Ghana see that their colleagues plan effectively towards their retirement, and then they would be socialized to form identity to also plan and save effectively towards their own retirement. On the other hand, if they are socialized by colleagues on improper planning model, then it would have negative effect on them during their retirement period.

Materials and Method of Study

Research Design

The study employed a descriptive survey design. Kothari (2007) defines descriptive research studies as those which are concerned with describing the characteristics of a particular individual or group. This type of study is relatively convenient, cheap and takes up little time to conduct. It describes issues or phenomena as seen or viewed in their natural setting and reported on as they were in their natural setting (Yin, 2014). In a similar view, Blaikie (2010) adds that descriptive research allows the researcher to establish a relationship between two or more variables. In addition, the design was convenient for the study considering the time

constraints used to carry out the research and also ensured maximum and efficient use of limited and scarce resources.

Research Approach

The study adopted a quantitative research approach. The rationale for the selection of this design is that, it is an appropriate means for arriving at statistical descriptions especially when the population is large. Quantitative research design gives the opportunity to ask a series of questions from the respective respondents and can make a summary of their responses using percentages, frequency counts or more advanced statistical indexes (Amaratunga et al., 2002; Leedy & Ormrod, 2010; Tillman et al., 2011).

Population

The study focused on the staff of Timber Industry Development Division (TIDD), Takoradi, Ghana whose ages were within the age range of 35-60 years. The total population of staff within this age range was 200. The researchers considered all staff in all departments of the company who were in the age range defined.

Sample Size

A total population of two Hundred (200) staff were targeted for this study. The sample size for this study was selected from the population, in accordance with the study conducted by Krejcie and Morgan (1970) which illustrates a table for determining the sample size from a given population. A sample size of a minimum of one hundred and thirty-two (132) was enough to give a meaningful generalization.

Sampling Procedure

The simple random approach was used to select members from different levels of staff categories. The technique was used to ensure that the staffs at all levels were comprehensively represented.

Data Collection Instruments

Data collection is very necessary in research work. Having considered the nature and the purpose of the research, the researchers deemed it appropriate to employ the use of self-designed questionnaire. The questionnaire was designed by the researchers in line with the objective of the study. The instrument used in this study was a close-ended questionnaire that was developed. Close-ended questions were used because they specified all the possible answers and also, provided answers that are easier to interpret and tabulate.

Validity and Reliability

In discussing the validity of the factors, this study referred to construct validity. Construct validity is a means of assessing how well the factors have been accomplished, these measured by the average variance (AVE > 0.6). In this study, the validity of the independent variables can be considered acceptable and can be described by discriminant validity. Table 1 shows the factors influencing pre-retirement planning. The factors scored the highest Cronbach's alpha of (0.680) which signifies that 68% which is considered to be good and the reliability is considered acceptable.

Table 1: Validity and Reliability

Variable	No. of items	Sample	Cronbach's Alpha
Factors Influencing Pre-retirement Planning	12	15	0.680

Source: Field survey, 2020

Data Collection Procedure

This study comprised of both primary and secondary data. Primary data were collected through the use of questionnaire. On the other hand, Secondary data were also obtained from journals, articles, books, reports, publications, electronic books and from the internet. The problem that the researchers encountered in collecting data was basically the busy schedules of the respondents.

Respondents were guided through how the questionnaire was to be completed. It was further explained to those who still had challenges in certain sections of the questionnaire. Some respondents were not in their offices at the time the questionnaires were administered so the researcher had to wait for the respondents. This gave respondents some specific time to respond to the questions on the questionnaire and after some days the researchers went back to respondents and duly collected the answered questionnaire as distributed to respondents for further analysis.

Data Processing and Analysis

Data processing operations carried out included data editing, cleaning and classification. Data editing and cleaning are the examination of the collected data so as to detect omissions and errors and to correct them whenever and wherever possible. Data classification is the arranging of the collected data in classes or groups with common characteristics. Similar data were then tabulated, and further analysis was conducted. The tabulated data were then analysed using quantitative techniques. Descriptive statistics were used for the analysis of the collected data which included parameters such as measures of central tendencies which involve mean deviation.

Editing was done by validating and checking the completeness of the data. This was done by researchers. The researchers verified validity by making sure that there is absence of non-numerical answers in the fields assigned to numerical answers and vice versa. The use of range was adopted to help the researcher edit the data collected. With this type of editing, the items on the questionnaire were individually checked to verify that data in a field are within the boundaries specified for that field.

Results and Discussion

The Perceived Consequences of Improper Retirement Planning

This research objective sought to assess the perceived consequences of improper retirement planning. In this study, respondents were presented with statements related to perceived consequences of improper retirement planning. This study measured the differences in perception among male and female of Timber Industry Development Division, Takoradi, Ghana. The results were transformed by comparing the mean and standard deviation of the dimensions.

The summary of the results is shown in Table 2.

Table 2: Perceived consequences of improper retirement planning

Profile	N	Mean	Std. Deviation
Do you perceive improper retirement planning will lead ill health?	132	4.48	0.878
Do you perceive improper retirement planning will lead to high dependency?	132	4.09	0.928
Do you perceive improper retirement planning will lead to psychological trauma?	132	3.64	0.991
Do you perceive improper retirement planning will lead to poor living standards?	132	4.21	0.996
Do you perceive improper retirement planning will lead to housing risk?	132	3.67	1.109
Do you perceive improper retirement planning will lead to high cost of living?	132	2.91	1.007

Source: Field Survey, 2020

The questionnaire assessed the perception of respondents on retirement by considering the issues raised in the table. This was done in order to know what respondents perceived consequences of improper retirement planning would be after active work. Majority of the respondents affirmed that improper retirement planning would lead to ill health with the highest mean and standard deviation of (M=4.48; SD=0.878). The next perceived consequence of improper retirement planning by respondents was poor living standards (M=4.21; SD=0.996).

Also, it should be noted that the third and fourth perceived consequences by workers of Timber Industry Development Division, Takoradi, Ghana were high dependency and housing risk both representing (M=4.09; SD=0.928) (M=3.67; SD=1.109) respectively. However, respondents indicated that improper retirement planning will lead to psychological trauma with the mean and standard deviation of (M=3.64; SD=0.991). Respondents also perceived that improper retirement planning will lead to high cost of living with mean and standard deviation of (M=2.91; SD=1.007).

Finally, the objective was to identify the perceived consequences of improper planning at Timber Industry Development Division, Takoradi, Ghana. The results that were analysed revealed that the major consequence that may occur is ill health. It was the major consequence as asserted by employees and had the highest mean (M=4.48; SD=0.878). The poor living standard was then followed by ill health since there is improper planning, retired employees may lack funds to take care of themselves. Hence, their living standard will decline. This was indicated with a mean and standard deviation (M=4.21; SD=0.996). The results also showed that there will be high dependency since the retiree of the Timber Industry Development Division, Takoradi, Ghana would not have money to take care of their dependents (M=4.09; SD=0.928).

Findings

The questionnaire assessed the perceived consequences of improper retirement planning. In this study, respondents were presented with statements related to perceived consequences of improper retirement planning. The majority of the respondents affirmed that improper retirement planning would lead to ill health followed by poor living standards. High dependency and housing risk was also a matter of concern. However, respondents indicated that improper retirement planning will lead to psychological trauma.

Respondents also perceived that improper retirement planning will lead to high cost of living. The results also showed that there will be high dependency since the retiree of the Timber Industry Development Division, Takoradi, Ghana would not have money to take care of their dependents.

Conclusion

Based on the findings of the study, it was concluded that, the employees believed when they do not plan well for their retirement there are some negative consequences that they may face. These consequences may affect the retirees and their dependents. Meanwhile, ill-health can be one of the consequences that may occur when they do not plan for their retirement properly. It may occur when the retiree did not plan considering his health care bills into investment that he or she makes for retirement. When the retirees start to consume inferior goods, it will be assumed that the retirees are out of money to take care of themselves and their dependents. This could be associated with poor living standards, since the person cannot consume normal and expensive goods that he or she used to consume.

High dependency may also occur as a result of lack of money to take care of dependents. This then tends to cause other consequences, such as psychological trauma. Housing risk can also occur in cases where retirees live in leased or hiring houses. Hence, they may be evicted since they may lack the adequate funding to continue paying the rents.

Recommendations

The following recommendations were made based on the findings and conclusions of the study.

1. The employees of the Timber Industry Development Division, Takoradi, Ghana should be sensitized on pre-retirement planning and perceived consequences at a very early stage in their working life.
2. The employees of the Timber Industry Development Division, Takoradi, Ghana, should be notified of their date of retirement in their appointment letter.
3. The Government of Ghana should institute a policy that would compel all public sector organizations to establish retirement seminars for their employees who are between 10 to 15 years to retire.
4. Timber Industry Development Division should improve upon the working conditions of workers, once their working conditions are improving they can earn enough and plan better for their retirement.

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Internal Displacements in Africa: Causes, Levels and Consequences



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Abstract: *Internal displacement has become one of the more pressing humanitarian, human rights and security problems affecting the African continent. As a persistent and serious problem, the ongoing wars and terrorist conflicts, flood and drought disasters have increased populations' vulnerability, with each causing a new surge in displacement, and those affected becoming less resilient. Using secondary data generated from relevant online sources, this paper discusses the causes, level and consequences of internal displacement in Africa. It also explains why Africa records high rate of IDPs, despite about 20 years of combined global efforts and investments to curtail the phenomenon. The study found that for Africa to find the right solution to this phenomenon, the continent requires a clear understanding of the phenomenon, starting from identifying the root causes and clarifying concepts, to recognizing its complexity and diversity. Therefore, it is high time for Africa to have a real commitment to, most effectively turn the tide on the continent's-wide problem. This effort must be led by the countries affected by the problem. The continent should also be supported by regional organizations such as African Unions and the international community.*

Keywords: Africa; Conflict; Disaster; IDP; Internal Displacement

Introduction

Internal displacement has become one of the more pressing humanitarian, human rights and security problems confronting affected countries and the international community at large. The phenomenon can be seen as one of the key challenges of the 21st century to not only Africa but also the world over, which requires global attention. Hence the United Nations (2017) described it as a global phenomenon and a political, economic, humanitarian and development challenge. To Cohen (2013), internal displacement is not a new phenomenon, but a policy issue which only emerged on the global agenda in the early 1990s.

Internal displacement is a persistent and serious problem in Africa, despite strong commitments on the part of national governments to prevent, address and resolve it. The Internal Displacement Monitoring Centre (IDMC, 2017) reports that about 15,000 people get displaced every day within the continent of Africa. Conflict caused 70 per cent of Africa's new displacements in 2016 and 75% in 2017 (IDMC, 2017). More than any other, the continent also accounted for 40% of conflict displacement globally, and the scale and relentless nature of the phenomenon are beyond the scope of humanitarian action. In 2016, there was a stock of 12.6 million people living in internal displacement in Africa (IDMC, 2017). There were 5.5 million displacements by conflict in Sub-Saharan Africa in 2017; which doubled the figure obtained in 2016 (IDMC, 2018). The Democratic Republic of the Congo (DRC), Central African Republic, Nigeria, Ethiopia, and South Sudan were among the

worst affected countries in the continent. In regional terms, East Africa bore the brunt of displacement by conflict (IDMC 2018 and Norwegian Refugee Council [NRC] 2018).

As the world focuses its attention on preventing irregular migration and protecting refugees coming out of Africa, it is no doubt that displacements that happened behind its own borders persisted at an alarming rate. From the literature it was found that the severity of displacement varies widely between and within African countries, as people and countries were not all affected in similar ways. Thus, the nature of displacement ranges from those who lost their homes to terrorism and fled in a desperate attempt to save their lives, to those hit by disasters and those pre-emptively evacuated by their governments to avoid the impacts of disasters.

As contained in the 2017 Annual Report of the IDMC, the increasing number of people displaced by conflict and violence in African countries presents considerable challenges to the achievement of the ambitious Goals of the 2030 Agenda for Sustainable Development, including those of the Sendai Framework for Disaster Risk Reduction and the Paris Agreement on Climate Change. This is because in many African countries with low coping capacity and weak governance, majority of the internally displaced people live in conditions of extreme vulnerability, and are often at risk of further upheavals and long-term impoverishment.

The year 2018 was an important year for displaced people worldwide. It was the year the UN member states aimed to finalize global compacts on refugees and migrants. The international community also marked the 20th Anniversary of the Guiding Principles on Internal Displacement; which serves as soft law for the protection of IDPs. However, studies have shown that there is little to celebrate, as more than 30.6 million new displacements associated with conflicts and disasters in 2017 were not a sign of success nor the persistence of new displacements in the last decade. Also, progress in the development of normative frameworks and policies has not been matched by implementation and investment in preventing or ending displacement in Africa, (IDM C, 2018).

Therefore, the rising trend in IDPs globally and Africa in particular has illustrated a failure to achieve durable solutions for those already displaced and to reduce the risk of future displacement across Africa. The implication of this is that, beyond the ongoing efforts to improve humanitarian responses, more efforts need to be put in place to tackle the drivers of risk that lead to ever increasing number of people to flee their homes.

In Africa, the ongoing wars and terrorist conflicts, flood and drought disasters all increase populations' vulnerability. With new surge in violence and displacement those affected become less resilient. Thus, relapses in many Sub-Saharan African countries caused great concern to international community, as number of IDPs in need of assistance spiked every year.

This paper thus, discussed the situation of internal displacements in Africa between 2015 to 2018 in terms of the causes, levels and consequences of displacement. The paper explains why many African countries continuously struggle with internal displacement, despite more than 20 years of international, regional and national policy efforts and investments to curtail the situation.

Conceptual Clarification

Displacement is a situation defined as a tipping point where abnormal movement patterns indicate the breakdown of normal coping strategies under severely stressed conditions. The United Nations (2017) defines ‘internal displacement’ as a personal experience shaped by the conditions in which displacement takes place – whether it is driven by a disaster, war or other forms of violent disruption, how long it lasts and whether governments and host communities are willing or able to support those displaced. Moreover, the African Union Kampala Convention on the Protection and Assistance of Internally Displaced Persons in Africa (2009) defines internal displacement as “the involuntary or forced movement, evacuation or relocation of persons or groups of persons within internationally recognized state borders”.

Similarly, the 1998 Guiding Principles defines “internally displaced persons” (IDPs) as “persons who have been forced or obliged to flee or to leave their homes or places of habitual residence in particular, as a result of, or in order to avoid the effects of, armed conflict, situations of generalized violence, violations of human rights or, natural or human-made disasters, and who have not crossed an internationally recognized state border. Thus, IDPs are those forced to leave their homes but who do not cross international borders. To Campbell (2017) displaced persons are largely devoid of the protections accorded by international law and UN agencies to refugees with a well-founded fear of persecution based on ethnicity, religion, political affiliation, and other criteria that is defined by international protocols. While ‘New Displacement’ refers to number of new cases or incidents of displacement recorded over the specified period, usually a year, rather than the number of people displaced; as some people may have been displaced more than once.

Internally displaced people are often confused with refugees. Unlike refugees, IDPs remain under the protection of their own government, even if their reason for fleeing was similar to that of refugees. Refugees are people who have crossed an international border to find sanctuary and have been granted refugee or refugee-like status or temporary protection. Therefore, the main difference between IDPs and refugees is that IDPs remain within the borders of their own country while refugees have crossed an international border in search of refuge, and this gives them legal refugee status which entitles them to certain rights and international protection.

Method and Data Source

This paper is purely conceptual. Secondary data were generated from published reports, journal articles, books and other relevant sources. Using various online and offline literature, information was gathered, screened and used to develop the paper. In particular, relevant reports from recognized international organizations and centres that specialize in researching the phenomena of displacements and forced migrations across the world have been critically examine and relevant data were distilled and used in developing the paper. The analysis and discussions were done using thematic approach, which appeared more conventional.

Causes of Internal Displacement

As the global monitor of internal displacement, under the Norwegian Refugee Council, the Internal Displacement Monitoring Centre (IDMC) tried to look into causes of displacements in most countries across the world and came to the conclusion that there are generally three major drivers of internal displacement – criminal, violent and inter-communal conflicts, disasters and development projects (IDMC, 2016). In 2017, it was reported (IDMC, 2018) that, 39% of all new displacements across the globe were triggered by conflict and violence, and 61% by disasters. The number associated with conflict almost doubled, from 6.9 million

in 2016 to 11.8 million in 2017 and Syria, Democratic Republic of Congo and Iraq accounted for more than half of the figure.

To Campbell (2017) in Africa, the primary driver of internal displacement is politics in the context of poor governance. To buttress this assertion, IDMC (2018) reported that, in 2017, Africa recorded some of the worst ever levels of displacements which are consequent of political instability, conflict, complex humanitarian emergencies, failed peace agreements, urban warfare and disasters.

In Sub-Saharan Africa, Lake Chad is a region that has long been plagued by lack of investment in basic health and education infrastructure and widespread poverty, inequality and political marginalization. It has also suffered prolonged droughts which, combined with the overuse of water resources, have caused the Lake to shrink to a fraction of its size in 50 years, (Carius, 2017). All of these elements have coalesced to undermine people's livelihoods, and it is in this environment that Boko Haram emerged and has come to thrive and expand (Carius, 2017, IDMC, 2017). Those factors continue to impede the pursuit of durable solutions, leading to protracted displacements that could in turn fuel further conflicts. Overall, ongoing conflict between Boko Haram insurgents and the Nigerian security forces remain the main cause (96%) of displacements in the northeastern states of Nigeria (IOM, 2018). It was thus observed that disaster events such as Tropical Cyclones Hurricanes Harvey, Irma and Maria happen seldom in Africa; as floods and droughts are the most frequently found in the continent.

In Africa, complex and interdependent risk drivers, including poverty and inequality, political instability and state fragility, water stress and food insecurity, climate change and environmental degradation, unsustainable development and poor urban planning converge in different ways in different countries to increase people's exposure and vulnerability to internal displacement. Specifically, climate change is expected to affect people's lives worldwide through shifting weather patterns, rising sea levels and more extreme weather events in many African countries. Many displaced people are located in or originated from climate change hotspots, and the effects of the phenomenon are predicted to increase displacements in Africa. (IDMC, 2017).

Displacement due to Conflict Events

Most of the time, internal displacement is not the result of natural disasters in Africa. For instance, in 2016, over 70% of new displacements in Africa were the result of conflict and violence, with a total of 2.8 million across 23 countries. Conflict also caused 75 per cent of Africa's new displacement in 2017. In Sub-Saharan Africa there were 5.5 million displacements by conflict in 2017 which doubled the figure obtained in 2016 (IDMC, 2017 and IDMC, 2018). The Democratic Republic of Congo, Nigeria and South Sudan are regularly among five countries worst affected. Displacements in Nigeria, DRC, Somalia, Ethiopia, etc. were largely the result of armed conflicts that erupted or escalated from 2010 to 2017 and beyond (IDMC and NRC, 2016). East Africa, where displacement is often driven by protracted and cyclical conflicts such as those in Somalia, Sudan and South Sudan, bears the brunt of the crisis in regional terms (IDMC and NRC, 2018). Many displacement situations, like complex emergencies in DRC, Somalia and Central African Republic (CAR) were characterized by high levels of violence and vulnerability. As such, conflict in the CAR, DRC, Nigeria, South Sudan, and Somalia, etc., continued to force dramatic numbers of people to flee their homes (International Committee on Red Cross [ICRC], 2017).

Displacement due to Disaster Events

Drought is one of the major drivers of displacement in Africa (IDMC, 2018). Though not a direct cause in and of itself, but has adverse impacts on food and livelihood security, including increasing potential for conflict over scarce resources. In 2016, data for displacement associated with drought obtained by the IDMC for the first time, showed 1.3 million people estimated to have been affected, mainly in the Horn of Africa (IDMC, 2017). In 2017 disasters also triggered significant displacement in the SSA, forcing almost 2.6 million people to flee their homes, (IDMC, 2018). In 2017, storms triggered two largest displacements in Africa. Tropical cyclone Dineo that made landfall in Mozambique in February, forcing more than 160,000 people from their homes, and damaging and/or destroying more than 100,000 homes and 65% of crops in the worst-affected province of Inhambane of Mozambique (United Nations, 2017). Tropical cyclone Enawo, the most powerful storm to strike Madagascar since 2004, made landfall in the north-east of the country on 7 March, which left nearly 250,000 people, or almost 1% of the country’s population, temporarily displaced. It also caused major damage to infrastructure and crops, and destroyed 20,000 homes. (IDMC, 2017; United States Aid [USAID], 2017). In Somalia IDMC (2017) was able to, for the first time, estimate the number of new displacements associated with drought, and the figure was high at 858,000 out of the total of 1,287,000 internally displaced persons for the country. Floods and droughts disasters also swept across the Nigerian and Ethiopian communities, destroying very large farmlands and crops, vital infrastructure and leaving millions of people homeless, taking refuge mostly in IDP camps, (International Committee on Red Cross [ICRC], 2017; IDMC, 2018).

Levels of Internal Displacement in Africa

Displacement is a continent-wide phenomenon in Africa. Literature has shown that since 2009 new conflict displacements have significantly outnumbered those associated with disasters every year, except for 2010 and 2012, when major floods caused significant displacement along the Niger River Delta, with Nigeria amongst the worst affected countries. It is evident that more than half of the continent’s disaster displacements took place in the Horn of Africa, while the Great Lakes and Lake Chad Basin regions accounted for 34.5% and 28% of new conflict displacements, respectively (IDMC, 2017). Over the years, the DRC, Somalia, Ethiopia, Nigeria and South Sudan have featured repeatedly among ten countries worst affected by conflict displacements in Africa.

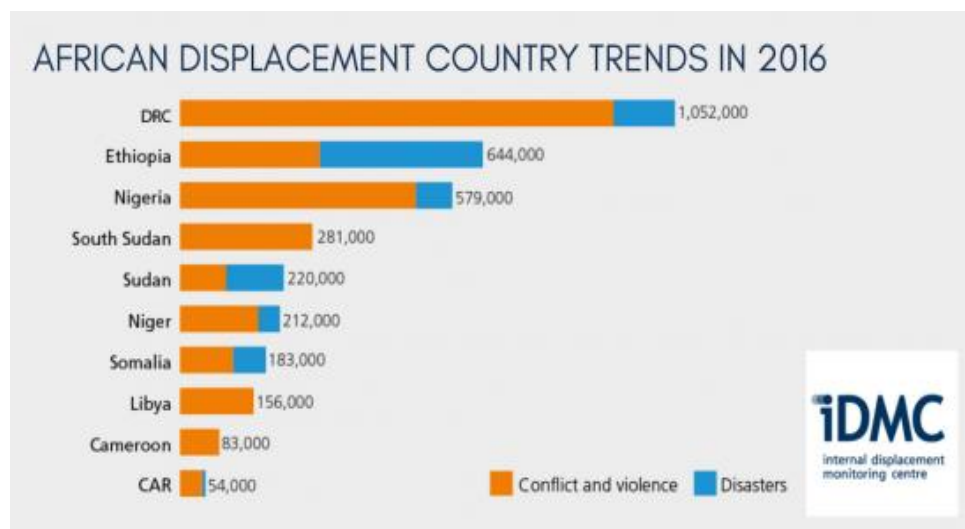


Figure 1: Trend of Displacement in Ten worst Affected African Countries

Source: Internal Displacement Monitoring Centre (GRID, 2017)

In 2016 the continent had accounted for about 40% of global displacements due to conflict; and at least 37 out of 55 African countries across all regions were affected. Report from IDMC revealed that there were at least 12.6 million people living in internal displacement as of the end of 2016 and more than 3.9 million new displacements due to violent conflicts (2.8m) and sudden-onset disasters (1.1m) were recorded in Africa during the same year. This is the equivalent of 10,500 people being forced out of their homes every day, which represents an 8.5% increase on the 3.5 million new displacements recorded in 2015, (IDMC, 2017).

The trend of displacements in Africa has shown a further deteriorating condition as the number of people internally displaced by conflict across the continent doubled in 2017. According to International Committee of Red Cross (ICRC, 2017) almost 15,000 people fled their homes to other places within their countries to escape conflict and violence every day; with a stock of 11.8 million people displaced by conflict and Sub-Saharan Africa accounted for nearly half of the figures (IDMC and NRC, 2018). Moreover, Key findings from the Global Report on Internal Displacement (GRID, 2018) showed that the Democratic Republic of Congo was hardest hit, with almost 2.2 million new displacements – more than the three worst-affected countries combined (South Sudan, Ethiopia and Central African Republic) which together accounted for 2.1 million. The IDMC (2017) reports that between January-June 2017 there were over 2.7 million new displacements in 29 countries across all African regions; conflict accounted for 75% (2.2million) of the figure; making Africa the worst-affected continent by conflict displacement in the world.

Table 1: Five Countries worst affected by Conflict Displacement, Jan – June 2017

Country	Displacement
Democratic Republic of Congo (DRC)	997,000
Ethiopia	213, 000
Central African Republic (CAR)	206, 000
South Sudan	163, 000
The Gambia	162,000

Source: Internal Displacement Monitoring Centre, (GRID, 2018)

From table 1 above, as of mid-2017, The DRC remained the worst affected country in the world, ahead of Iraq and Syria, as it recorded 997,000 new conflict-based displacements by the end of June. There were also 206,000 in CAR; which is four-times the country's figure for 2016. The Gambia experienced a major spike in displacement in January for the first time on record; the result of a constitutional crisis and military intervention, following a disputed presidential election. More than 162,000 people were displaced internally and 48,000 fled to neighboring countries; though people returned relatively quickly once the crisis had abated, (IDMC, 2017; United Nations High Commission for Refugees [UNHCR], 2017).

Similarly, displacements by disasters showed that in 2017, storms and floods forced additional 2.6 million people to flee their homes across the region; East Africa accounted for the majority with 53% (IDMC and NRC, 2018). However, there was also a significant rise in the figure for Southern Africa. More than 40,000 new disaster displacements were recorded in the region, accounting for 44% of the total continent's figures. As shown in figure 2 below, IDMC (2017) and USAID, (2017) reported that displacements associated with sudden-onset disasters continued at a similar rate to 2016, with about 552,000 new cases in the first half of the year 2017 across 19 different countries in Africa.

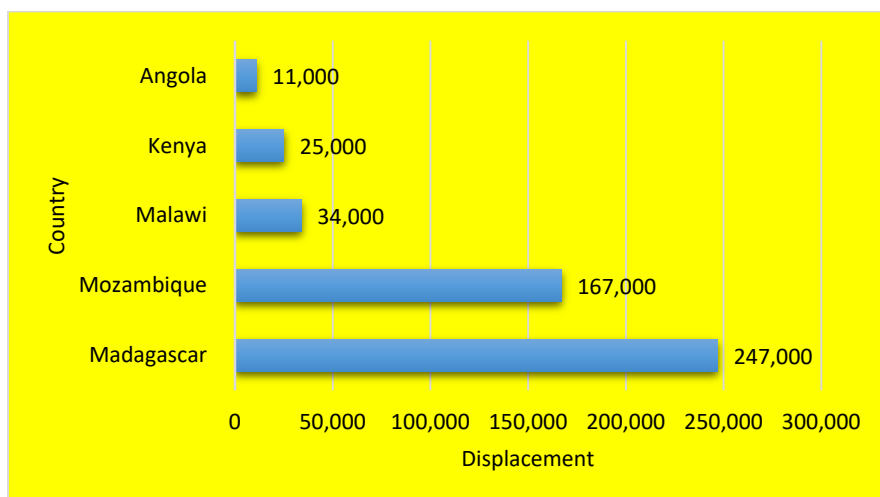


Figure 2: Five Countries worst affected by sudden-onset disaster Displacements, Jan – June 2017
 Source: IDMC, 2017

In the first half of 2018, the IDMC (2018) revealed that there were an estimated 5.2 million new internal displacements associated with conflicts in 10 world-most affected countries. As depicted in figure 3 below, 6 (60%) out of the 10 countries were from Africa which hierarchically include Ethiopia, Democratic Republic of the Congo, Nigeria, Somalia, Central African Republic and South Sudan.

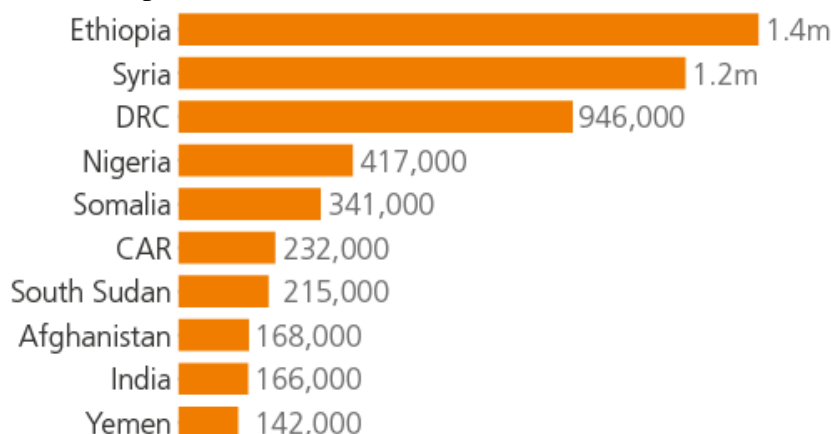


Figure 3: 10 Countries with most new Displacements associated with Conflicts in 2018
 Source: IDMC, Mid-year Report, 2018

In the horn of Africa, Ethiopia, Nigeria, Kenya and Somalia, each experienced nearly a million new displacements due to unprecedented flooding in April, May, June and July, 2018. In Ethiopia, the new conflict in the Gedeo and West-Guji zones of southern part of the country triggered more new displacements than in any other country in Africa in 2018. This triggered over a million new displacements (IDMC, 2018). Similarly, there were an estimated 3.3 million new internal displacements associated with more than 700 disaster events in 110 countries and territories in the first half of 2018. Four African countries – Somalia (456, 000), Kenya (326,000) Ethiopia (171,000) and Uganda (150,000) came on the top of the list, next to India (IDMC, 2018).

The Regional Analysis: Internal Displacement in Sub-Saharan Africa

In Sub-Saharan Africa (SSA), chronic displacement keeps figures stubbornly high. From the literature, as in 2015, records showed that there were 12.5 million IDPs in the 21 SSA

countries and Nigeria have the largest population of IDPs in the region with over 4 million population of IDPs, who have been forced out of their homes as a result of violent conflicts (Edward and Yenda, 2016 and IDMC, 2016). Though the region accounted for only 14% of the world’s population, 60% of new conflict and disaster displacements took place in the region in 2017 (IDMC, 2018; World Bank, 2018). Meanwhile, there were 5.5 million displacements by conflict in 2017, which doubled the figure obtained in 2016. Disasters also triggered significant displacement in the region, forcing almost 2.6 million people to flee their homes, (IDMC, 2018).

The Lake Chad Basin, which include Nigeria, Niger, Cameroon and Chad as a whole accounted for 8% of new displacements associated with conflict in SSA (African Union, 2017). In the Basin, a combination of Boko Haram insurgency and clashes over diminishing resources have over the years led to millions of displacements in the area. The notorious Boko Haram insurgency ravaged the area since 2009 which caused huge number of IDPs, mostly women and children. Both the insurgency and clashes over diminishing resources led to 279,000 new displacements in Nigeria’s North-Eastern states, 99,000 in Cameroon’s far North region, 40,000 in Niger’s Diffa region and 5,800 in Chad’s Lac region in 2017. As of the end of 2017 there were more than 2.2 million people living in displacement in the Basin (IDMC, 2018 and UNHCR, 2017).

Also, the Horn of Africa (Ethiopia, Somalia, Kenya, Eritrea and Djibouti) accounted for one-fifth of the region’s new displacements; the result not only of conflict but also sudden and slow-onset disasters and the complex overlapping dynamics between them (IDMC, 2017).

Within the region, taking conflict as a factor the DRC was hardest hit, with almost 2.2 million new displacements, more than twice the number in 2016 and more than the next three worst-affected countries in the region combined. The three together, South Sudan, Ethiopia and the CAR accounted for a total of more than 2.1 million new displacements, (IDMC, 2018).

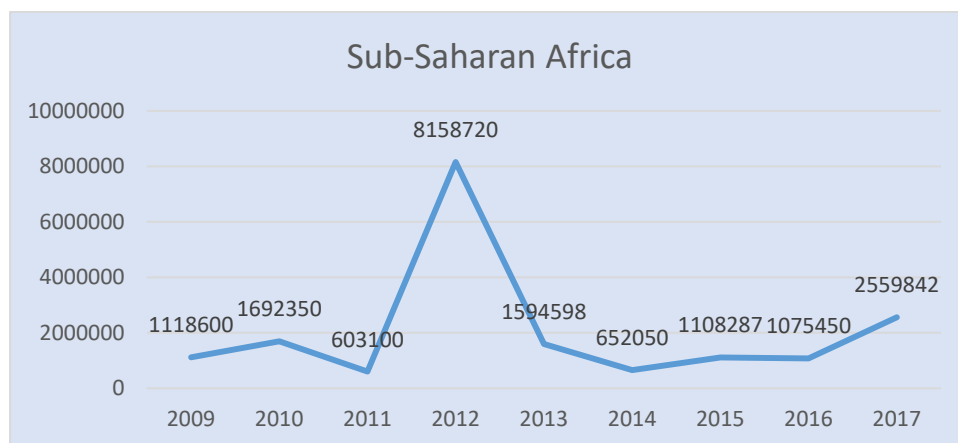


Figure 4: Trend in New Displacements Associated with Disasters in SSA (number of cases)
Sources: The World Bank Group, 2018

Disasters also triggered significant displacement in Sub-Saharan African in 2017, forcing almost 2.6 million people to flee their homes. Drought triggered most of the 434,000 displacements recorded in Ethiopia, cyclone Enawo displaced 247,000 people in Madagascar, floods 189,000 in Niger and cyclone Dineo most of the 170,000 in Mozambique. Other countries affected by disasters were Nigeria (122,000), Uganda (95,000) and Malawi (84,000), (IDMC, 2018).

The North African Experience

In North Africa, majority of new displacements in 2016 were recorded in Libya, where more than 156,000 people fled conflict. Nearly, 304,000 people were living in internal displacements as of the end of the year 2016. In Algeria, 2,800 new conflict displacements were recorded, though they were the result of the forcible relocation of migrants. Although no new conflict displacement was recorded in Egypt in 2016, 78,000 people remained displaced as of the end of 2016 following forced evictions from the Sinai in previous years, (IDMC, 2017)

In South Sudan, ongoing fighting and surges of violence in new areas have forced people to flee their homes, many of them multiple times. In 2013, when the conflict erupted, 857,000 new displacements were recorded (Gebrekidan, 2013). There were 281,000 new conflict displacements in 2016 (IDMC, 2017). As reported by Office for the Coordination of Humanitarian Affairs (OCHA) (2016), by the end of 2016, a quarter of the country's population had been forcibly displaced over three years of conflict and an estimated 50% of the country's IDPs are children. Besides, by 2018, the number of people uprooted since the start of the conflict in 2013 has reached more than 4 million, including 1.9 million internally displaced persons (IDPs), with up to 85% estimated to be children and women. Since the renewed violence in July 2016, more than 2 million people have departed to neighboring countries and one million people, largely from the Equatorials, have fled southward to Uganda alone (OCHA, 2018). Furthermore, despite ongoing peace treaty negotiations, violence was undiminished in South Sudan in 2018. There was a significant rise in the number of new displacements in the first half of 2018, which represents 215, 000 as compared to the 163,000 reported in 2017, (IDMC, 2018 and OCHA, 2018).

Consequences of Internal Displacements

As contained in the 2018 Global Report on Internal Displacement, that the pledge to "leave no one behind" at the heart of the 2030 Agenda recognizes that the continued presence of vulnerable groups, including displaced people, affects the development prospects of the communities that host them and of societies as a whole.

Whenever conflicts or disasters occur, the results are loss of lives and properties. Behind the figures are human lives that are uprooted and disrupted, all too often in the most traumatic of circumstances and in many cases for months and even years. Although all persons affected by conflict and/or human rights violations suffer, displacement from one's place of residence may particularly make the internally displaced vulnerable. Such persons may be in transit from one place to another, may be in hiding, may be forced toward unhealthy or inhospitable environments, or face other circumstances that make them especially vulnerable.

Internal displacement, affecting some 40 million people worldwide, has become increasingly recognized as one of the most tragic phenomena of the contemporary world. Often the consequence of traumatic experiences with violent conflicts, gross violations of human rights and related causes in which discrimination features significantly, displacement nearly always generates conditions of severe hardship and suffering for the affected populations. It breaks up families, cuts social and cultural ties, terminates dependable employment relationships, disrupts educational opportunities, denies access to basic necessities as food, shelter and medicine, and exposes innocent persons to such acts of violence as attacks on camps, disappearances and rape, (International Crisis Group, 2017; Garba and Dauda, 2017; OCHA, 2016; OCHA, 2017; OCHA, 2018; Esipisu, 2018; IDMC, 2017; Mohammed, 2017; UNICE, 2016; and Human Rights Watch, 2016). Though there a lot of consequences associated with

internal displacement numerous to mention, this paper groups the effects into four broad categories. These include psycho-social and health, economic, gender-based violence and recruitment in to forced armed groups. Below is the highlight of each of the aforementioned type.

Psycho-social and Health Consequences

When people become displaced by any cause, the social organization of displaced communities may have been destroyed or damaged by the act of physical displacement. Displacement in the wake of violence makes family members often become separated or disrupted and lose the security and support that comes with living in their communities. Women may be forced to assume non-traditional roles or face particular vulnerabilities. Internally displaced populations especially groups like children, the elderly, or pregnant women, may experience profound psychosocial distress related to displacement.

Displaced people often have only limited access to essential goods and services such as healthcare and assistance. In line with this, the UNICEF (2016) states that sometimes violence restricts humanitarian access and prevents aid from reaching IDPs. Also, when in host-communities displaced persons mostly settled in locations that have little or no basic services, such as water, electricity, or primary health care and education services, which lead to overstretching the available ones or compounding the problems of lacking the services.

Economic Consequences

Displacement due to conflict, drought and floods in Africa has gravely affected traditional economic activities, particularly agriculture and trading, crippling the local economies and increasing the vulnerability of entire populations. Many internally displaced persons (IDPs) lose their incomes and assets, and live-in chronic poverty. Beside clear physical impediments, returnees face other significant obstacles to achieving durable solutions. For instance, in Africa, many are pastoralists, farmers and fishermen who previously relied on cross-border trade for their livelihoods, which have been severely affected by their loss of access to land and restrictions on their movement, (International Crisis Group, 2017). For instance, Mohammed (2017) states that in north-eastern Nigeria, the displaced people and communities, being mostly rural farmers and herders were forced to abandon their farms and livestock, which in many cases were taken away by the Boko Haram insurgents mostly in Borno state.

Displacement due to insecurity, destruction of economic infrastructure and restrictions on movement and trade combined, have significantly increased extreme level of food insecurity in many of the affected areas and have created beggars in communities which hitherto were completely independent and, in some cases, even considered wealthy in terms of land and livestock ownership. A typical scenario is like the case of the north-eastern Nigerian states of Adamawa, Borno and Yobe (IDMC, 2017). Due to high number of displaced populations in the north-eastern region of Nigeria, who were mostly farmers and traders, the UN warned of famine-like conditions in the three states, and as of February 2017 an estimated 64% of households in the state were food insecure (Office for the Coordination of Humanitarian Affairs [OCHA], 2016). Similarly, in South Sudan the five-year long conflict-related displacement has devastated local economies and contributed to repeated failed harvests, as people were unable to access their farms; as such, OCHA (2017) reports that six million people were in a condition of food insecurity.

Consequence of Displacement on Gender-based Violence

People are often driven from their homes by violence only to face it again in their places of displacements. As a consequence of displacement, gender-based violence was commonly

reported in many IDP camps and women and girls are especially vulnerable to sexual violence and exploitation in many camps (OCHA, 2016). For instance, in DRC, rape was employed as a weapon of war. Twelve per cent of the female population reported been raped in a sample survey in 2007. In some areas up to 40% of displaced women reported cases of sexual violence (Johnson, 2010). Not only female, male also face gender-based violence while displaced due to conflict, although male rape, which is a taboo in many African countries, is very rarely reported, (Miya, 2015).

Findings by Mohammed (2017) in the north-eastern Nigeria also revealed exposure to dangers of sexual harassment and violence by the IDPs. In this regard, in October 2016, Human Rights Watch (2016) reported that of a total of 400 cases of sexual abuses of displaced people, mostly women and girls in Adamawa, Borno, and Yobe States 66% cases were perpetrated by the camp officials and 28% by members of host communities, respectively. Also reported by the World Bank (2011), in CAR nearly half of the IDPs, mostly women and children had direct experience of gender-based violence, 27% had witnessed a killing, and 20% reported being raped.

Forced Recruitment into Armed Groups

In terms of human right violation, displaced young men are often at greater risk of forcible recruitment into armed groups as found by UNHCR (2012). Therefore, displacement has a devastating adverse effect on the future of displaced adolescent population. For instance, the UNICEF (2016) estimates that more than half of South Sudan's children have been taken out of school due to conflict related displacement, the highest proportion in the world, and that 16,000 have been forcefully recruited into armed groups.

To this end therefore, in general displaced persons face security risks, economic disruption, and limited access to food, water, and sanitation, shelter, education, and health services, among others, (UNICEF, 2016). Displacement is also reversing current development gains and threatens the achievement of future development objectives in Africa (IDMC, 2017), as many places of displacement are insecure. The World Bank (2011) and ICRC (2017) report that in DRC, Somalia, Nigeria and South Sudan there are concerns that some displacement camps have lost their humanitarian and civilian character, leaving their inhabitants facing serious security risks from armed groups, sometimes because of their perceived alignment with one faction or another.

Policy Recommendations

The scale and complexity of internal displacement in Africa means that significant efforts are required to provide an effective, large-scale and well-coordinated humanitarian response. In order to effectively address the plight of IDPs and seek durable solutions to internal displacement in Africa, the UN Secretary-General called for renewed efforts to prevent new displacement, address its root causes and support safe, dignified and durable solutions for internally displaced people. He further suggested the establishment of a target of halving internal displacement globally by 2030. As such, Africa should answer the clarion call by addressing a number of issues including targeting the underlying drivers of displacement.

Since many displacements that occur in the continent are product of conflict, countries in Africa should lead efforts to address the phenomenon as part of their national economic, security and development agendas. To achieve this both political leadership and institutional investments are needed to bring about vital change at the national, regional and continental level. As such Africa should ensure that:

- The national capacities to deal with internal displacement and reduce future risk should be systematically built and maintained in each affected country. This includes policy planning, implementation and follow-up at the highest levels of government, combined with the devolution of resources and decision-making to local authorities to enable them to help IDPs achieve durable solutions. Specifically, issues to be addressed include, but not limited to: humanitarian assistance; security, stabilization, peacebuilding, recovery, rehabilitation and resettlement, human rights protection; social inclusion, psycho-social support; education, health, social and economic development such as vocational training, financing and collaboration between governments and Civil Society Organizations (CSOs).
- The Humanitarian assistance should be centered on youth employment, women empowerment, natural resource management, investment in infrastructure, and environmental protection. This requires full engagement from the Regional, National and states governments and authorities, CSOs, and the international community.
- For solution to displacement due to disasters, effective implantation of the provisions of Hiago and Sandai treaties, which many African countries were signatories, would be vigorously pursued. This will ensure effective disaster risk reduction (DRR) which can prevent and mitigate internal displacement and reduce its duration and impact. It can also lessen people's vulnerability to repeated displacement, particularly during slow-onset crises, such as floods and droughts, which are set to become more frequent in the future as a result of climate change in Africa.
- Finally, all policy and interventions must incorporate and link humanitarian with development efforts while strengthening governance programs at all levels.

Conclusion

It is argued that human and state security, economic growth and social stability are impossible to be achieved if a country has large number of people living in protracted displacement, or faces recurrent new displacement and high level of risk. It is also believed that displacement is both a cause and consequence of insecurity and low or unequal economic and social development. Hence, no doubt that internal displacement has been a serious issue of African concern. The data presentation above shows evidently that Africa is in the midst of a deepening displacement crisis as unresolved conflicts across the continent are driving the highest level of related displacement in the world. The level has been so high and based on the causes of the events, conflict has made Africa a horn of internal displacement compared to other continents across the globe.

Thus, failure to address the causes of protracted displacement in the continent has been one of the major factors behind the stubbornly high figures in Africa. The high level of displacements without serious commitment from the national governments may threaten to undermine the achievement of Africa's broader development objectives

Although some African countries showed leadership commitment in 2009 by adopting the Kampala Convention, the political will to domesticate the first regional treaty on internal displacement is still needed. By the year 2019 the treaty marked its 10th anniversary with very little or no progress in implementing the resolutions of the convention by many countries. Thus, action is urgently required to make progress by turning their commitments into reality for the continent's IDPs. In order to actualize this, many local and international organisations are supporting various African Governments to fulfil their responsibility of

assisting and protecting the displaced persons. However, key challenges remain in meeting the humanitarian needs.

The paper concludes therefore that for Africa to find the right solution to this phenomenon, it requires a better understanding of the situation, starting from identifying the root causes and clarifying concepts, to recognizing its complexity and diversity. Hence, it is high time for Africa to have a real commitment to, most effectively turn the tide on this Africa's continent-wide problem. This effort must be led by the countries affected by the problem. The continent should also be supported by regional organizations like African Unions and the international community.

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Crimes and Insecurity in Rural Nigeria



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Abstract: *In recent years, Nigeria witnesses an exponential increase in crimes and insecurity in rural communities. Villages and towns have become vulnerable and favourable arena of operations of criminals and insurgents. This paper examined crimes and insecurity in rural Nigeria, with a view to identify the forms of crime prevalent and how they affect security therein, as well as factors responsible for such security-malaise. The method used in this research is content analysis. The study used Broken Windows Theory to provide theoretical explanation for the study. The reviewed literature revealed an upsurge of crimes involving rural banditry, cattle rustling, Boko Haram insurgency, communal and religious conflicts, armed robbery and pipeline vandalism. These crimes or security challenges have led to the loss of lives and properties, destruction of rural settlements and displacement of rural dwellers. The reviewed literature also showed that ungoverned or unregulated spaces, inadequate security presence, youth unemployment, presence of hideouts and illiteracy are the factors responsible for crimes and insecurity in rural Nigeria. The paper recommended that; improvement in formal policing of rural communities, improved border security, control of bushes/forests, implementation of community policing and good governance are strategies that will help curb crimes and insecurity in rural Nigeria.*

Keywords: crimes, insecurity, rural Nigeria, security.

Introduction

Crime, and by extension insecurity, is a major challenge bedeviling people and governments world over. There is no human society that is free from one or more crime-problem. Although it exists alongside man, its trend, pattern and consequences in contemporary era are more alarming and devastating. Despite efforts at various levels to curb it, criminality and insecurity have inadvertently continued to rise up. However, studies conducted by (Grote & Neubacher, 2016; Ladan, 2019; Arisukwu, Igbolekwu, Oye, Oyeyipo, Asamu, Rasak, & Oyekola, 2020) showed that crimes relating to insecurity are relatively higher in developing countries like Nigeria. The justifications are based on large crime and insecurity proneness concentrated in these countries. Nigeria for example, is confronted with crimes and insecurity in several fronts. In the north, there are insurgency, kidnapping, banditry, farmers-herders conflicts, rape, intimate partner homicide and the like (Okoli & Ugwu, 2019). The southern part experiences armed robbery, kidnapping, assassination, fraud, cultism and vandalism (Ewetan & Urhie, 2014; Chiedu Solaja & Olawunmi, 2015). However, the rate, type, cause and effect on each region or community largely vary (Esiri, 2016). Strangely, rural dwellers across the country are recently faced with more crime-problem and insecurity, which negatively affect community social solidarity, productivity and ultimately country's sustainable development (Arisukwu, et al., 2020).

Previously, criminologists and security practitioners in Nigeria, and elsewhere, have focus more on urban criminality and insecurity (Glaeser & Sacerdote, 1999; Chiedu et al, 2015; Esiri, 2016; Weisheit, 2016; Kunnuji, 2016), while little attention was given to the menaces in rural areas (Ceccato, 2016). Ladan (2019) observed that insecurity within the rural communities manifests in more dangerous pattern involving kidnapping for ransom and ruthless attacks. As such, many locals have been sent out of their homes to Internally Displaced Persons' (IDPs) camps. Similarly, rural areas in Nigeria have become notorious with all kinds of crime (Arisukwu et al., 2020). Alemika (2014) revealed that both urban and rural dwellers in Nigeria have witness consistent increase in crimes such as kidnapping, rape, armed robbery and theft. However, rural dwellers are likely to suffer more crime victimization than urban dwellers.

The justification for this study, in essence, is that rural communities are becoming more criminogenic and insecure by the day. In addition, there is little scholarship and accurate crime statistics that reflect the reality of crimes in rural Nigeria. Against this backdrop, this study examined crimes and insecurity in rural Nigeria, with a view to identify the forms of crimes prevalent and how they affect security therein, factors responsible for the crimes and insecurity and suggest strategies or solutions to curb the menaces.

Conceptualizing Crime, Insecurity, and Rural community

These concepts are multifaceted and have been variously defined. However, the terms are explained based on the purposes of this study.

Crime: - There is no agreement in Criminology on 'what is crime' (Jeffery, 1959). However, more often than not, contemporary criminologists define crime from legal perspective. In line with this, Lacey and Zedner (2012) argued that criminal law surely, plays a key role in defining the subject matter of criminology as a discipline, and hence, promises to identify the scope and limits of criminal liability. Tappan (1947) Stated that crime is an "intentional act [or omission] in violation of the criminal law committed without defence or excuse, and penalized by the State as a felony or misdemeanor". Hence, crime is any intentional act that violate State laws and subject to sanction by law.

Insecurity: - As 'security' is regarded as a multifaceted and multi-dimensional concept, so also insecurity. However, in the context of this study, insecurity implies presence of fear, harm, and destruction as a result of criminal activities. Similarly, insecurity, as an antithesis of security, describes a condition that exists due to lack of adequate measures put in place to protect individuals, property, and information against hostile persons. Insecurity is believed to be ignited when crime-problem are not proportionally responded to (Siro, 2016).

Rural community: - Naswem, Unongo and Nyityo (2019) viewed rural community as a remote area, by-passed by trends in modernity, social amenities and presence of governmental institutions. Rural community connotes a place characterized with small population size/densities, interpersonal relation, small business, agrarianism, and constant interaction amongst members (Grote & Neubacher, 2016). Therefore, rural community is an area that is remote, agrarian and relatively less developed in terms of infrastructure and social amenities. By their intrinsic characteristics, rural areas or communities provide high opportunity for crime to occur (Naswem, 2019).

Methodology

The method used in this research is content analysis. The study is principally theoretical and greatly employed secondary data. The body of existing literature on the subject under study was reviewed lengthily through content analysis. Previous researches by scholars on the phenomena under study were very helpful to this article. Recent empirical studies and statistical data on rural crimes and insecurity across the country were also reviewed.

Theoretical Explanation

Theory is an organized set of interconnected Statements and propositions that both explains and predicts social happenings or events. Accordingly, criminological theories seek to arrive at explanations that account for criminal behavior (Brown, Esbensen and Geis, 2010). In this paper, the phenomenon of crimes and insecurity in rural Nigeria is explained using broken windows theory.

Broken Windows Theory

Broken windows theory was developed by Wilson and Kelling in 1982. The theory is based on the premise that if broken windows were left unattended to or unrepaired, miscreants will eventually break the remaining windows in the premises. The 'broken window' is a metaphor used to denote ways in which behavioural norms breakdown, that is; ones individuals begin to disregard norms that sustain order in a community, both order and community will collapse (Paterson, 2004). The theory examines the degree to which signs of incivility and disorder may actively promote criminal activity, which may occur when both signs of physical and social disorder points that an area is not secured and thus, prone to criminal behaviour (Lab, 2010).

Hence, broken windows theory connects incivility and disorder to crime, in that a noticeable decrease in order makes people more fearful and possibly withdraw from such communities. This scenario then weakens informal social control and possibly increase disorder and crime as potential criminals are most likely to increase their activities in that area. Efforts to minimize disorder through improvement of the physical environment, improved formal and informal social control as well as improvement in community policing will uphold community order, discourage and prevent crime.

Accordingly, the theory both explains the upsurge of criminality in the rural communities and provide solutions for it. As predicted by the theorists, the upsurge of crime and insecurity in rural communities started with youth disregard to rural authorities. Minor property theft, forceful seizure of land, theft of farm products, cattle rustling etc., that were left unchecked give rise to more violent crimes like murder, kidnapping, rape, banditry, pipeline vandalism in the rural communities. Likewise, the gross inadequacy of public security in the rural communities create vulnerability and make them safe-heavens for hardened criminals. Crimes and insecurity in rural communities lead to migration and displacement of several communities' members. For instance, rural dwellers in Ogun, Oyo, Borno, Yobe, Zamfara and Katsina, States consequently increasing the rate and nature of crimes.

Based on the proposition of the theory, criminality and insecurity in the rural communities will be prevented through improved presence and readiness of formal control agencies, adaption of a zero-tolerance policing strategy, strengthening of informal control measures through community participation in upholding societal norms as well as improvement in community policing among others. According to Wagers, Sousa and Kelling (2017) for over 30 years since the original publication of the broken windows article, it has in many respects

become a conventional wisdom among policy makers and practitioners. However, the theory neglects the condition and central role of the offender in the crime equation, instead focusing on maintenance and order. The theory also sounds more like a crime prevention/reduction policy than a theory.

Manifestations of Crimes and Insecurity in Rural Nigeria

Nigerian rural settings are witnessing unprecedented increase in crimes and insecurity. These twin phenomena manifest in various dimensions. Arisukwu, et al (2020) found that crime incidence is high in rural communities, just that the pattern varies from crime committed in urban areas. Okoli and Lenshie (2018), Ladan (2019), Okoli and Ugwu (2019), Okoli and Lenshie (2018) submitted that northwestern region has recently been enmeshed in the rapid upsurge of rural banditry along its international frontiers as well as the forested interior. The culprits known as bandits instigate fear and violence to raid communities of their livestock and other valuables. They often attack during the middle of the night and create chaos, burning homes and shooting guns in the air, to cause people to flee and more effectively maneuver cattle out of the community (Bagu & Smith, 2017).

Before 2015, resident of Katsina State especially in rural areas had battled with the menace of cattle rustling, banditry and other organized criminal activities. It goes to the extent to denying people access to their farmlands and rearing of cattle become almost impossible. Towns and villages that had existed for several decades have been vacated (Yahaya & Bello, 2020). According to Gadzama, Saddiq, Oduhie and Dariya (2018), the rise of cattle rustling as part of rural banditry is not unconnected to availability and possession of arms and small light weapons in the hand of non-State actors in Nigeria.

Similarly, there are evidence (Alimba & Malgwi, 2020; Husted & Blanchard, 2020) that Boko Haram insurgents nowadays attack and reestablish State control in contested areas, especially rural zones. Barau (2018) suggested that most of the areas captured by insurgents are rural, thereby forcing the dwellers to flee to urban areas for safety. According to International Displacement Monitoring Center [IDMC] (2014), the insurgents have reportedly forced about 1.5 million persons to flee from their villages and towns to other States in the country, including neighbouring countries of Chad, Cameroun and Niger Republic. Insurgents' Attacks on rural dwellers, especially in the northeast, have posed devastating effects on their socio-economic activities (Alimba & Malgwi, 2020). As rural areas are described by agrarianism, agricultural crime are also common there. Naswem et al (2018) stressed that theft is prevalent on rural farms. This is what they describe as agricultural crime, which consists of stealing of food items, seeds, farm tools, and livestock.

In the North central, or what is called the middle-belt, communal clashes and religious violence are the experience of crime and insecurity in rural areas. For Bagu and Smith (2017), as Fulani communities generally lived outside of more urban areas, the rural Christian communities saw the Fulani as an 'Islamic threat'. Herdsmen increasingly became victims of cattle theft and personal attacks, including targeted attacks on 'Ardo' (leaders) of various Fulani tribes. Reprisal attacks from affected members of the Fulani communities followed. Revenge attacks continued and became cyclical, which led to the deaths of many people from both groups (Bagu & Smith, 2017).

Obidiegwu and Elekwa (2019) confirmed the existence of insecurity, lawlessness, intimidation, armed robbery and violent crimes in rural communities of Abia State. In the Niger Delta region, community vigilante groups are found to be renting their arms to armed

robbers and communities in conflict. This has been traced as a key factor that fuels and escalates crime, insecurity and conflicts in local communities in the region (Nyiayaana, 2015). Aroh, Ubong, Harry, Umo-Otong and Gobo (2010) observed that pipeline vandalism in rural communities is very common in the south. This criminal act often lead to serious environmental pollution and deaths, in the event of explosion.

Factors Responsible for Crimes and Insecurity in Rural Nigeria

Crimes are products of opportunities. Thus, occurrence and/or reoccurrence of crimes and insecurity in rural Nigeria are linked to the factors discussed below, although the list is not exhaustive:

Ungoverned Spaces: - Okoli and Lanshie (2018) Stated that the nonchalant attitude of Nigerian government towards control of her territorial domains creates ‘ungoverned heavens’ conducive for criminal impunity. For example, non-regulation of nomadic migration and pastoralism has complicated the incidence of rural violence in northern Nigeria by situating rural banditry, herders’ militancy and the like in our rural communities. This is evident in the existence of decade-long farmers-herders conflicts in rural northern Nigeria. In the aftermath of these conflicts, the locals always bear the brunt.

Inadequate Security Presence: - Security presence is an important factor that deters crime from occurring. Potential offenders are likely to refrain from committing crimes for fear of being detected by police or other security personnel. In contrast, there is glaring inadequacy of police presence in rural areas today. Some villages have never host a government security agency. Other communities where police posts exist wake up never to see their police again. These problems are not unconnected to acute shortage of manpower that confront our public security agencies. This is why phenomena of kidnapping banditry, cattle rustling, and farmers-herders conflicts increase daily in northern Nigeria due to inadequate or no presence of public security agencies in rural communities (Gadzama, et al., 2018). The south faces similar challenge, which paves a way for pipeline vandalism, kidnapping, cultism, armed robbery in rural areas. Pipeline vandalism is being reinforced in the Niger Delta region in the absence of deterrent measures, arising from ineffective law enforcement (Eric & Oluwagbenga, 2017). Ineffective here implies that there are no adequate security personnel to secure all pipeline routes in the region and beyond.

Youth Unemployment: - In Nigeria, youth form the highest percentage of the country’s population. More so, the country is challenged by unemployment. The latest Nigeria’s unemployment rate (year 2018) was put at 23.13 percent (National Bureau of Statistics -NBS, 2021). 2018’s is considered latest because rates for years 2019 and 2020 were not released by NBS. Criminologists and researchers have empirically established relationship between youth unemployment and crime or security challenges in all societies (Aroh et al., 2010; Nkechi & Lawrence, 2016; Siro, 2016; Ookli & Lanshie, 2018; Yahya & Bello, 2020). The unemployed youth are invariably impoverished. These twin problems creates frustration and aggression, which create criminal tendency and actually crime-problem in any rural communities it exist.

Presence of Forests/Hideouts: - Rural communities are characterized by forests, rocks, mountains, creeks and other hostile topographies. Men of the underworld utilize these topographies as operational bases and hideouts. It is in line with this that the Nigerian Army launched Operation Sharan Daji (sweeping the Forest) that carried out ground offensives against bases/hideouts of the bandits. This leads to a reduction of banditry and cattle rustling in States like Zamfara, Kaduna and Sokoto (Ladan, 2019; Yahaya & Bello, 2020). Highway-

armed kidnapping of travelers is also linked to availability of forest hideouts. Travelers are taken to hideouts in forests where their families or relatives are contacted for payment of ransom (Okoli & Ugwu, 2019). Obidiegwu and Elekwa (2019) also acknowledged the existence of criminal hideouts in rural communities of Abia State when he recommended that locals should be recruited as members of vigilante groups of their communities as they know the hideouts of criminals therein.

Illiteracy: - Rural populace suffer setbacks both in terms of school infrastructures and quality education. This is why illiteracy rate is higher amongst the locals. And, illiteracy is a contributing factor for criminal proneness. Because illiterate persons lack analytical skills to weigh the risk of engaging in criminal activities, they are easily lured to work with insurgents or bandits in rural communities (Ladan, 2019). Some of them serve as informants or as fighters for criminal gangs. Similarly, rural dwellers suffer from acute low productivity, social and economic retrogression due to ignorance (Harande, 2009).

Conclusion

Urban communities are predominantly characterized with relative inflation of crime rate across the years. On the other hand, rural communities in Nigeria have always been rather peaceful with high spirit of solidarity, harmonious interpersonal relationships as well as relatively low crime rate. Unfortunately, rural Nigeria that is hitherto known to provide shelter for peace, security and serenity is gradually turning into hotspots of violence and criminality. The nefarious activities of insurgents, bandits, kidnappers, cultists, armed robbers, rapists, vandals among other criminals, continue to pose serious threat to rural security and development. These had caused concomitant effects to local dwellers; thousands were killed, which added to large number of frustrated orphans and widows; others were sent out of their communities and settled in camps as IDPs; agriculture, which the locals depend on, was made impracticable, leading to food scarcity, hunger and poverty. These ugly situations require swift response from the government, security agencies as well as communities.

Recommendations

The magnitude of the problem calls for immediate action from the government, relevant security agencies, the community and other stakeholders to arrest the somewhat anomic situation. Some relevant strategies to curb crimes and insecurity in rural Nigeria include:

1. The Nigeria Police Force (NPF), as the leading policing agency, should either establish a trained and relatively equipped unit that will cover security gaps in the rural areas. In addition, the NPF, Nigeria Security and Civil Defence Corps (NSCDC), should ensure that their Divisional Police Stations have enough work force and logistics to secure the rural areas. Hence, the mere presence of the formal Police will both provide feeling of security to the local people and deter potential criminals.
2. Nigeria's bushes and forests have been taken over by criminals and terrorists as enclaves. Developed countries have since established trained bush fighters squad to provide security and protect available human and natural resources in their bushes and forests. Criminals and terrorists in Nigeria have taken advantage of the absence of such arrangement to perpetrate their illegal operations and keep hostages. Because of the lengthiness, complexity and interconnectivity of the Nigerian bushes and forests, a Joint task force should be established involving the Nigerian military and air force as well as traditional hunters. The task force should be trained specially to understand the geographical characteristics as well as nook and cranny of the Nigerian bushes and forests. This will make them understand their possible hideouts, their areas of

- strength and weaknesses. The squad should also exploit use of technological surveillance tools like drones, Global Positioning System (GPS) to ease detection.
3. The monitoring and control of movement of goods and people across Nigerian borders is crucial to its internal security and development. The presence of officers of the Nigerian Immigration Service and the Nigerian Customs Service do not seem to checkmate the movements of traffickers, terrorists, small arms and light weapons, illegal drugs among others across the Nigerian borders. High capacity metal detection systems or technologies are needed to be employed by relevant security agencies to search goods brought into the country.
 4. The adoption and implementation of community policing will make the task of criminal investigation easier for the Police and other security personnel in rural communities. This is based on the idea that most public security personnel are alien to the communities they serve. Collaboration and harmonious relationship between public security personnel and their host communities will make them feel safe to provide intelligence to the security personnel. Such intelligence will make the police be aware of the criminals, their whereabouts and hideouts, nature of operations as well as strength and weaknesses. Community policing will also strengthen the informal control mechanisms of the rural communities. The police and other security agent should work together with the existing traditional rulers and vigilante groups to ensure that criminals are arrested and other would-be offenders are deterred.
 5. Good governance is characterized with justice, equity, fairness and transparency. Corruption among government officials has led to the neglect of the rural communities with regard to developmental projects. The rural communities are left with little or no access to basic life necessities, including schools. As an alternative to illiteracy, poverty and unemployment as well as the attendant youth violence and criminality, government must ensure that all individuals have access to quality education as well as lawful employment opportunities that will make them financially stable and will help increase or sustain their standard of living. Government should ensure that security of its citizens is core and prime, irrespective of political inclination, quest for political advantage, ethnic or religious background. Government officials caught involved in corrupt practices that involved jeopardizing security of citizens and the State must be executed.

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Julius Nyerere's Philosophy on Education: A Panacea to Graduate Unemployment in Katsina State of Nigeria



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Abstract: *The research examines the Nyerere's Philosophy of Education: A Panacea to the problem of Graduate Unemployment in Katsina State. The objective of the research is to critically analyze the problem of massive unemployment among the educated youth or graduates in Katsina State using a philosophical frame work of Julius Nyerere's philosophy of education. The study analyzes and observed that, the problem of Graduate Unemployment in Katsina State is attributed to the educational system of the country that is weak and unproductive in nature, contrary to Nyerere's educational philosophy on "self-reliance and self-sufficiency". The educational system practiced in Katsina State and Nigeria in general since independence has its curricular inherited from colonial education that was designed for its colonial agenda and therefore considered irrelevant and inappropriate for human capital development in our contemporary societies. Also primary and secondary schools are not productive as they were made to be a mere training ground for further studies. The study is quantitative and purely descriptive. Primary source of collecting data and specifically structured questionnaires were administered to the sampled population. Also secondary sources were employed among which include; academic journals, text books, articles and statistical data from National Bureau of statistics. Slovin's formula was used to arrive at the sampled population, stratified sampling technique was employed to divide the study areas in to 3 strata/ senatorial zones as follows; Katsina zone, Funtua zone and Daura zone. Quota sampling was used to allocate the questionnaires to the 3 strata to ensure equal representations of all the study areas. Data collected were analyzed using descriptive statistical tools such as tables, charts and percentages. Julius Nyerere's Philosophy of Education remains its theoretical Frame Work. To overcome the problem of Graduate Unemployment in Katsina State, the study concludes and recommends the need to get the educational curricular at the tertiary level, secondary level and primary level redesigned and restructured to reflect the political and socio-economic realities of our contemporary societies. This can be done through making human capital development a great priority by encouraging skills acquisition, vocational and entrepreneur training at, Primary school, Secondary school and Tertiary school level, as well as encouraging economic diversification so as to benefits from other economic opportunities of the State. This can go a long way in creating job opportunities for the educated and non-educated youth in the State.*

Introduction

In the contemporary societies today, the challenge of youth unemployment has become a global concern. It is a problem that most countries of the world are facing including the so called super power economies of Europe and the United States of America. However, the problem is more popular in the third world countries of Africa, Asia and Latin America (Oppong & Sachs, 2015; Adekola, Olawole & Moses, 2016)). National Bureau of Statistics (2016) reveals that, over 200 million people globally were estimated to be unemployed predominantly classified as youth.

Youth unemployment challenge is a global concern that constantly attracts the attention of both governmental and non-governmental organizations. This is because idleness among these group members of the society many of which are largely educated represents waste in human capital and investment on education (Okoye, 2014).

In Nigeria, the increasing rate of youth unemployment is becoming alarming and unsettling. National Bureau of Statistics Report of 2016 reveals that Nigeria was ranked 173rd among other countries that have published unemployment statistics. It also indicated that a total of 52 million youth in Nigeria are unemployed and this figure consisted mostly of newly qualified graduates of university and other higher institutions of learning.

Graduate youth in Nigeria roam the streets for years after graduation in search of a white color jobs. Out of frustration and desperation, some secure menial job and others resort to anti-social activities such as armed robbery, kidnappings and cybercrimes (Essien & Ogochukwu, 2015).

The rate of graduate unemployment in Katsina State and Nigeria at large is largely connected to its nature and character of the educational system or philosophy inherited from colonial government. Veronica (2017) on this note observed that, the philosophy on education as captured by National Policy on Education (NPE), even though claimed to focus towards self-reliance and self-sufficiency, much have not been achieved in the area of producing skillful, self-reliant and self-sufficient graduates of higher institution. This is because educational policies designed have not been matched with proper implementation. The crisis been experienced is traceable to the deep rooted colonial educational mentality for white color job. Katsina State has youth unemployment particularly graduates of tertiary institutions as one of its major concerns. It is considered by Ladan (2019) to be one of the major causative agents of the present insecurity situation of the State. National Directorate of Employment (NDE) for example, revealed that the total of 34,656 unemployed graduate youth in Katsina State have reported for registration between 2015 and 2019.

Ahmed (2018) maintained that, Graduate unemployment is considered to be responsible for so many antisocial criminal activities such as terrorism, banditry, armed robbery and communal, inter ethnics and religious clashes across the country. It undermines the stability of the nation as well as massive increase in rural urban migration, thereby creating serious antisocial crimes in the urban centers, neglecting of economic activities of the rural areas.

Over the years, different governments/administrations have embarked on various development plans, policies and programs, with a view to reduce the massive unemployment rate among the educated youth population (Ahmed & Ogunlela, 2012). However, the Problem of graduate unemployment in Nigeria and Katsina State in particular remains strong and active as a result of poor implementation of the empowerment programs, political instability at both federal and State level as well as weak institutional frame work.

It is against this background and the failure of all the previous governments' effort that the researcher intends to use the ideas of Julius Nyerere on Education as solution to graduates unemployment in Katsina State of Nigeria

Philosophy of Education

Philosophy of Education is conceived as a branch of philosophy that seeks to answer philosophical questions such as the aims and objectives as well as guiding ideals of education, means of evaluation, institutions and practices of education. Other issues include answer to questions such as the content and character of education, the authority or power of a State and teachers, rights of students and teachers among others.

According to Siegel (2010), for much of the history of western philosophy, philosophical questions concerning education were high. From Socrates to Plato, Aristotle, Locke and Rousseau down to 20th century figures such as Bertrand R., John Dewey R.S to mention but a few.

Moore (1982) posits that Philosophy of Education is connected with the general philosophy partly by its purposes but more directly by its methods. It is concerned with the scrutiny of what is said about education by those who practiced it or by those who theorize about it, in terms of its character, aims, function and content.

Okoh (2003), Nwafor (2007) & Akinpelu (2005) observed that Philosophy of education is an applied philosophy primarily concerned with the application of philosophical principles, to the practical conduct of education.

Graduate Unemployment

Graduate unemployment is conceived by the study as the number of people with a university degree and other post-secondary certificate holders in a given society who are capable and willing to work, but unable to find jobs and those who are working below the working hours, (underemployed).

Opong and Sachs (2015) described graduate unemployment to encompass graduate of higher institutions who are ready to work, but could not find a job. In these categories of people are fresh graduates, retrenched graduates and those on menial jobs. Samuel (2011) conceived graduate unemployment as a kind of unemployment amongst people with academic degrees. In other words, graduate unemployment could be seen as a condition in which graduate job seekers are without a job.

Otobo (2002) categorizes graduate unemployment's into two: graduates who have never worked since graduation, and graduates who have lost their jobs, seeking re-entry into the labour market. According to Oviawe (2010), the level of unemployment is a reflection of the State of a nation's economy. It therefore suffices that Graduate unemployment is highly dependent on the overall status of the economy. Mike (2011) & Adofu & Ocheja, (2013) posit that lack of required skill caused by inappropriate school curricula is one of the major causes of Graduate unemployment in the country. This means graduates lack entrepreneurial skills to facilitate self-employment instead they rely heavily on government for a white color job. Adofu & Ocheja, (2013) posits that lack of employable skill due-to inappropriate school curricula is one of the major causes of Graduate unemployment Nigeria. That is to say graduates in the country lack the required human capital and entrepreneurial skills to facilitate self-employment, instead they rely heavily on the government for employment.

Another factor that contributes to people with educational qualification among youth being unemployed is the expansion in the educational system (Samuel, 2011). Nigeria has over 40

federal universities, 30 State owned universities, 35 private universities and other 19 degree awarding institutions apart from many polytechnics, colleges of education and other post-secondary certificates awarding institutions in the country. The result is graduation and unemployment rate that is growing rapidly while economic growth and development is assuming a declining shape. Mike (2011) identified corruption as a cause of graduate unemployment in Nigeria. He declared that, when those in government who are to use public money for building more manufacturing industries and employment creation programmes are busy embezzling the funds for their selfish use, the next is massive increase in graduate unemployment rate.

According to Kayode, Arome & Anyio, (2014) during the period of unemployment youth can easily lose their skills, causing a loss of human capital, it could also lead to low level of income and high rate of income inequality which further aggravates poverty and frustration among the youth population. This situation represents the waste of both material and human resources.

Longe (2017), Observed that the economic cost of the problem of youth unemployment involves reduction in the nation's gross domestic product (GDP), reduces economic welfare, and reduces output and under-utilization of human capital. Onodugo (2015) observed Brain Drain to be one of the major implications of graduate unemployment. This is when educated youth move from their country to another country usually for better living condition. Since there is no hope of getting employment after graduation, Nigerian graduates have been hit with an obsession to travel out of the country which is a great loss of man power and productivity.

Philosophy of Education in Nigeria

Education whether formal or informal has a purpose and the purpose and goals of education in Nigeria are contained in the National Policy on Education. The purpose of Nigerian Education is therefore to serve as the vehicle towards achieving the national goals and philosophy of Nigeria (Diana, 2016). The philosophy of Nigerian education is contained in the section 1 of the National Policy on Education (NPE). According to the policy document, the Educational philosophy of Nigeria is targeted at achieving stated goals such as a free and democratic society, a just and egalitarian society, a united and self-reliant nation and land full of opportunities for its citizens (NPE, 2013)

The philosophy of education in Nigeria however has failed to appropriately cover its purpose and designed goals as a result of the failure of the curricular to reflect the actual needs of the nation. The curricular was designed to be a mere replica of the western philosophy with much more emphasis on subjects and courses that are not relevant to the realities of Nigeria. Azenabor has rightly observed that;

Our (Nigeria) educational system naturally leads to unemployment because the products are not trained to generate jobs independently. We introduce foreign courses that are redundant and unproductive into our school curricula just because they are being offered in Western countries... Education is supposed to prepare one for life in his society, but the Nigerian Educational System divorces the pupil from the society in which it is supposed to prepare them (Azenabor, 1999:70).

Educational system operated since the post-independent Nigeria placed emphasis on academic excellence rather than skills acquisition which can prepare the individual for a more

useful and fulfilling life within the society. This over reliance on academics rather than skills could be the major bane of graduates' unemployment in Nigeria (Veronica, 2017). That is to say, educational curricular in Nigeria does not reflect the cultural identity and socio-political and economic realities of Nigeria as the institutions of learning all over the countries have been considered more of certificate awarding institutions with which one can get a white color job.

Another issue with regards to the Nigerian Educational System as identified by Adiele (2006) is the facts that basic educational institutions such as Primaries and Basic Secondary Schools are unproductive, instead they merely serve as training ground for the preparation of students to the higher institutions of learning, part of the reasons why many drop outs and those that could not make it to higher degrees are unemployed today.

Methodology

The study is purely quantitative and descriptive. The data were primarily collected through the use of structured questionnaires. As a result of the non-availability of statistical data of the unemployed graduate youth in Katsina, the study used the number unemployed graduates that registered with National Directorate of Employment for the study period (2015-2019) which stand at 34656 unemployed graduates. Slovin's formula for sample collection was used to arrive at 150 respondents with 8.15 as margin of error. Katsina State being the study area was divided in to 3 senatorial zones of Katsina, Funtua and Daura through the use of stratified sampling techniques and quota sampling method was employed to allocate the sampled population to the 3 strata with 50 respondents each in order to ensure equal representation of all the strata. The data collected were presented and analyzed using descriptive tables, frequencies, percentages and charts. The research also employed secondary means of collecting the necessary data. These secondary sources include; data from National Bureau of Statistics, History and Culture Bureau, academic journals and publications, text books and articles. Julius Nyerere's Political Philosophy on education remains the theoretical frame work adopted by the researchers.

Julius Nyerere's Philosophy of Education

Julius Nyerere's philosophy of education was built on the basis of "Education for Self-reliance". Nyerere's aim in "Education for Self-Reliance", one of the chapters of his most popular work, *Ujamaa: Essays on Socialism*, are to interrogate the purpose of education for the mental development of the average Tanzanian, assess the method of colonial education in Tanzania and examine its impact on the Tanzanian populace and economy as well as suggesting the form of education that would suit the socialist basis of socio-economic policy upon which Tanzania is to be governed (Adeyanju, 2017).

Nyerere (1968) stressed on the need of education especially considering the socio-economic and political realities of Tanzania at independence. He posits that the educational systems differ in its content and organizational structure, because the societies providing the education also differ. But the purpose of education anywhere is to transmit from one generation to the next, the accumulation of knowledge and wisdom of the society and prepare the young people for their future membership of the society as well as their active participation in its maintenance and development.

Muwalimu maintained that the African educational system in the colonial period was designed on a system that suits the imperialist agenda of colonialism and capitalism.

The education provided by the colonial government in the two countries which now form Tanzania had a different purpose. It was

not designed to prepare young people for the service of their own country; instead it was motivated to inculcate the values of the colonial society and to train individuals for the services of the colonial State (Nyerere 1968:46).

Thus, this form of education inculcated into the Tanzanian people, proves inadequate and inappropriate for the economic and social development of the post-colonial State of Tanzania. The colonial education system was at variance with the traditional value of the Tanzania. He further maintained that:

The educational system introduced into Tanzania by the colonialists was modeled on the British system, but with even heavier emphasis on subservient attitudes and on white color skills. Inevitably, too, it was based on the assumptions of a colonialist and capitalist society. It emphasized and encouraged the individualistic instinct of mankind instead of his co-operative instincts (Nyerere 1968:525).

Nyerere (1968) also in an attempt to explain the feature of educational system in Tanzania at independence laments that, it was basically an elitist education designed to meet the interest and need of a very small proportion of those who enter school. Secondly, Tanzanian educational system divorces its participants from the society it supposed to be preparing them for. And thirdly, it encourages school pupils on the idea that only formal education is worthwhile, people were judged by the formal certificate they obtained. He believed that Tanzania always want to create a socialist society which is based on three principles; equality and respects of human dignity, sharing of national resources and work by all and exploitation by none.

Nyerere (1968) finally suggested three major aspects that would help in re-structuring the existing educational system, and these are as follows; Firstly, change in the curriculum, the type of education to be given to young Tanzanians should be that which would prepare them for the task of developing Tanzania happily, and functions well in a socialist society. Secondly, re-organization of the school structure was suggested. Lastly, the entry age of children into schools is to be revised.

Thus, the educational system advocated by Nyerere is very similar to what is obtainable in Nigeria's educational system as the two countries share the same colonial experience and both have their educational system rooted to colonial educational system. That is why the Nigerian educational system of today is the true reflection of colonial education that was designed on the bases of white color skills and white color job mentality.

Data Presentation

Table 1: Questionnaires Administered

Questionnaires	Frequency	Percentage
Total Administered	150	100%
Retrieved	142	95%
Not retrieved	8	5%

Source: (Field, 2019)

Table 1 above represents the total number of questionnaires administered and retrieved. It revealed that 95% of have been retrieved. Only 5% of the questionnaires were not retrieved. This means number of questionnaires returned is more than the number that did not return.

Table 2: Gender Distribution of the Respondents

Gender	Frequency	Percentage
Male	105	74%
Female	37	26%
Total	142	100%

Source: (Field, 2019)

The gender distribution from table 2 shows that 74% of the respondents are males only 26% are females, which means the respondents are predominantly males. This is because most of the female graduates are mostly married and therefore hardly accessible due to their religious belief. Also parents in the study area give more support to male child education than female as result of ignorance.

Table 3: Age Distribution of the Respondents

Age	Frequency	Percentage
18-25	40	28%
26-30	82	58%
31-35	20	14%

Source: (Field, 2019)

The age distribution from table 3 above shows that larger percentage of the respondents is between 26 and 30 years old. The age bracket represents majority of the unemployed graduate in Katsina State.

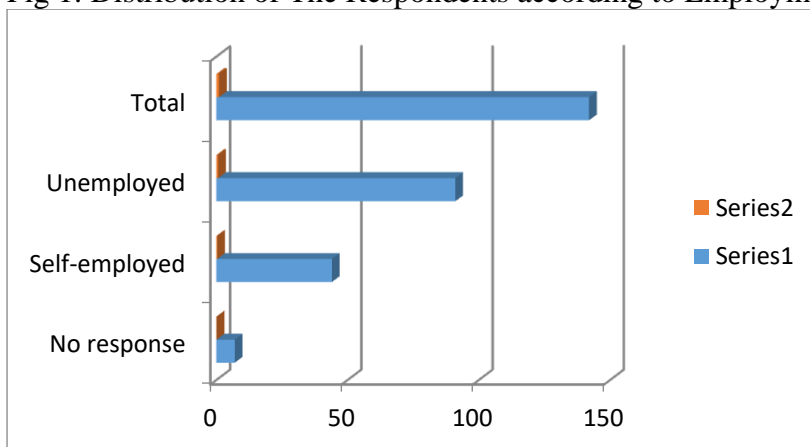
Table 4: Distribution of the Respondents According to Employment Status.

Employment status	Frequency	Percentage
Unemployed	91	64%
Self-employed/Menial Job	44	31%
No response	7	5%

Source: (Field, 2019)

The distributions of the respondents by their employment status from table 4 above revealed that majority of the respondents are either unemployed. Which means graduate unemployed youth in Katsina largely believe in depending on their families for livelihood if government job is unavailable than to take menial job or other economic opportunities around.

Fig 1: Distribution of The Respondents according to Employment Status.



Source: (Field, 2019)

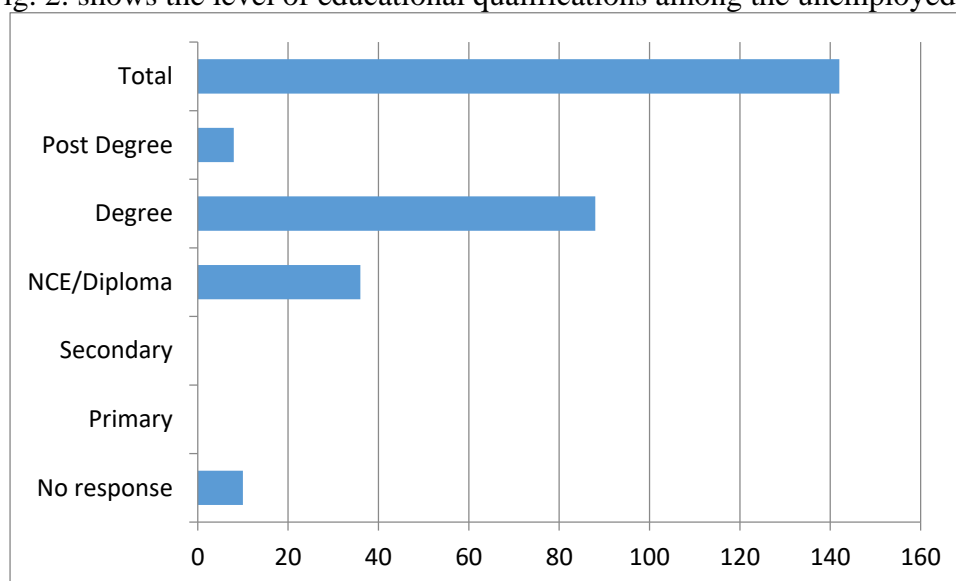
Table 5: The Level of Educational Qualification among the Unemployed Graduates

No response	Primary	Secondary	NCE/Diploma	Degree	Post degree	Total
10	0	0	36	88	8	142
7%	0%	0%	25%	61%	7%	100%

Source: (Field, 2019)

Table 5 revealed that 68 percent of the respondents have at least degree as their highest level of educational qualifications. This means majority of the unemployed graduate in Katsina are those with university degree, this is because of their mentality that university graduate must secure a white color job, for them the fruit of university degree depends solely on getting an office work.

Fig. 2: shows the level of educational qualifications among the unemployed graduate



Source: (Field, 2019)

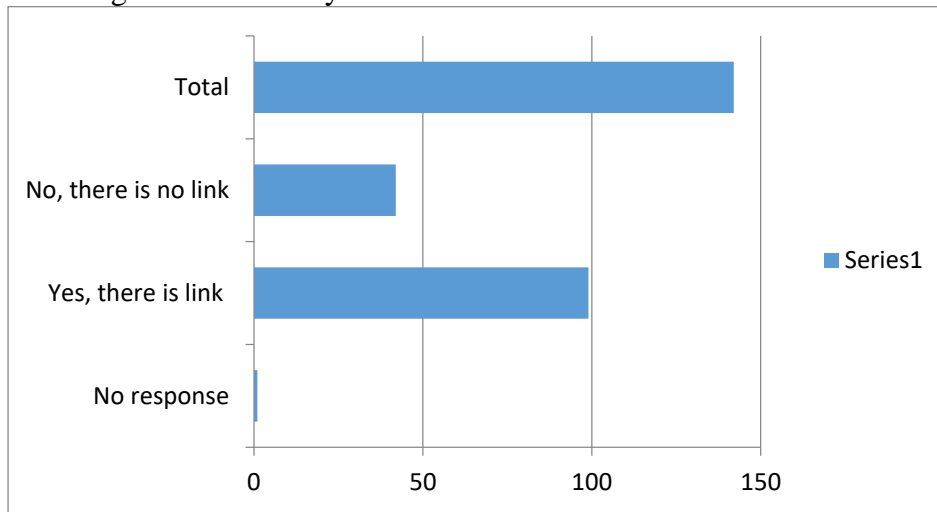
Research Question 1: Is there any relationship between the problem of Graduate Unemployment in Katsina State and the educational system of the country?

No response	Yes, there is	No, there is not	Total
1	99	42	142
1%	70%	29%	100%

Source: (Field, 2019)

The result shows that, 70% of the respondents believed the facts that graduate unemployment problem in Katsina is linked to the educational system of the country. This means that, the problem of graduate unemployment is directly linked to the nation’s educational curricular which is considered to be weak and unproductive as it neglects to a very large extend the aspect of skills acquisition and entrepreneurship training that can easily generate job opportunities for the graduates. The curricular came up with the courses of tertiary institutions that are purely foreign and therefore irrelevant to our contemporary realities of Katsina State.

Fig. 5: shows the opinion of the respondents on whether there is a link between educational system and graduate unemployment in Katsina State.



Source: (Field, 2019)

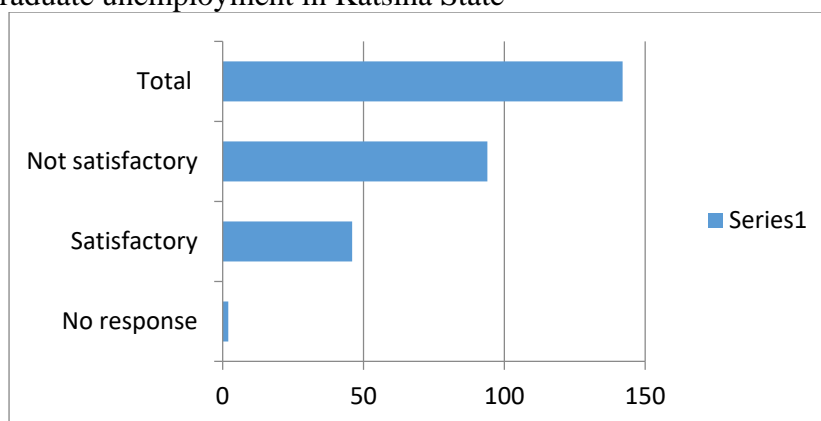
Research Question 2: How do you rate the efforts of Government at curbing the problem of Graduate Unemployment in Katsina State?

No response	Satisfactory	Not satisfactory	Total
3	44	95	142
2%	31%	67%	100%

Source: (Field, 2019)

The result shows that the respondents that represent 67% predominantly believed that, the effort of government at curbing the problem of unemployment among graduate in Katsina is not satisfactory. This is because more emphasis was given to social empowerment programs such as N-Power and S-Power, neglecting skills acquisition and agricultural empowerment programs that play a vital role in youth empowerment not only in Nigeria but all over the globe.

Fig. 7: shows the opinion of the respondents on the effort of government in curbing the rate of graduate unemployment in Katsina State



Source: (Field, 2019)

Discussion of the research Findings

The findings from the distribution of the respondents on the basis of educational qualification revealed that unemployment among the educated youth in Katsina State is mostly found among university graduates or degree holder, this is resulted from the attitude of graduates in the State, that degree holders are above taking menial jobs or participating in agricultural production and other economic activities in the State. They believe that university graduate is meant to work in government offices, hence they continue to wait for government employment. Also joblessness is found even among the youth that have post-degree qualifications in Katsina State. The finding is in line with the submission of Nyerere (1968) and Samuel (2011).

The research also found that, the mass unemployment among the educated youth in Katsina State is directly linked to the educational curricular in the country. The educational curricular was designed based on the international standard of the western societies not based on the needs and realities of Katsina State and Nigeria at large, that is why graduates find it difficult to cope with the present realities of the society. This is in consistent with the assertion of Nyerere that;

Colonial education in Tanzania was not transmitting the values and knowledge of Tanzanian society from one generation to the next, or preparing Tanzanians for the membership of their present and future society. It was a deliberate attempt to change those values and traditional knowledge and replace them with the knowledge from different society (Nyerer, 1968: 47).

The educational curricular was therefore designed with courses of tertiary institutions that are purely foreign and inappropriate to the present economic realities of Katsina State and even the technical, vocational and entrepreneurial aspect is largely neglected.

The research discovered that graduates of Universities, Colleges of Educations and Polytechnics in Katsina State spend years struggling to get job because they consider only Government/office Job worthy of their educational qualifications. The finding is consistent to the findings of Samuel (2011).

it was also discovered by the study that, efforts by both the State and federal government are proved to be inadequate for youth empowerment in the State, by virtue of the facts that despite the conducive environment the State have for agricultural production, less emphasis is given to the agricultural sector that is capable of empowering larger portion of the unemployed graduates in the State if taken seriously.

Conclusion

Unemployment among the teeming graduates of Katsina State is one of the most disturbing socio-economic challenges the State is facing today. The affected graduates become highly frustrated and psychologically shattered as a result of which they deviate from the general norms and resort to antisocial activities such as; armed robbery, cybercrimes, kidnappings among others. The massive unemployment among the graduate youth in the State is largely attributed to the weak, unproductive and inappropriate educational system or educational curricular which is a direct reflection of colonial system of education.

Government that is largely considered by those graduate youths in the State as the last hope for employment opportunities is not doing enough in the area of job creation. This is a result of bad economic situation of the country, poor leadership and lack of political will, bribery and corruption, misappropriation of public treasury, neglect of agriculture and industrial

sector as well as over reliance on grants from federal government as the only source of revenue.

Recommendations

To come up with possible solutions of the worrisome question of graduate unemployment in Katsina State and the country at large, the research is here by recommending the following proactive measures for urgent implementation in line with the philosophy of education of Julius Nyerere.

The educational curricular in Nigeria and Katsina State in particular should be reviewed and redesigned to reflect the present socio-economic and political realities of our societies. It should be geared towards judicious exploitation of both human and material resources available in the state, this can be done by making human capital development a priority, through encouraging the idea of skills acquisition and vocational training as well as entrepreneurship orientation in our higher institutions of learning. The graduates of this day must be a thinker, a problem solver and an entrepreneur. Federal and State governments should collectively demonstrate more commitment in the area of economic diversification in the State. This can be achieved by boosting agricultural sector, which if made attractive to those unemployed graduate youth, can be the largest employer of labour, considering the productive nature of the lands in Katsina State.

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The Prospects of International Relations and Nation Building in Nigeria: Lessons from China



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Abstract: *This article explored the prospects of international relations in nation building between Nigeria and the Peoples Republic of China through comparative study. This study is conceptual in nature; the methodology therefore, embraced the secondary method of data collection and analysis only. The interpretation of data was done in the form of documentary and content analysis of materials obtained from the internet, books, journals, newspapers and excerpts. The findings pointed out that the place of international relations in nation building process cannot be ignored especially when nations are finding it difficult to explore the importance of relating well with other members of the international community amidst internal problems. In the 21st century, China championed her nation building process by exploring the benefits of globalization through healthy and positive interaction in socio-economic and political decisions. The decision of China to adopt a holistic approach in its relations with other members of the global community is based from the implications in her domestic environment, to outsourced ingredients that can help in sustaining nation's building. Finally, the article made some useful recommendations to those involve in Nigeria's nation building. One of such recommendation is that Nigeria can really achieve more in her nation building, but must learn from what China does at the global level to help her domestic environment.*

Keywords; International relations, Nation-building, Environment, Community, Nigeria and China

Introduction

It is a popular saying that no nation is an island of itself; a nation cannot develop by itself alone, but must seek support from other nations to achieve development and in doing so countries conduct healthy relations with one another for the world to benefit. In the past the quest for resources by rich and powerful nations over the poor but heavily endowed countries ended up in conflict as a process of building their societies from outside. Those whose resources are carted away by rich and powerful nations have ended up having problems in building their nations after acquiring their independence. To Gambari (2008) nation-building consists of many important aspects. Firstly, it is about building a political entity which corresponds to a given territory, based on some generally accepted rules, norms, and principles, and a common citizenship. Secondly, it is also about building institutions which

symbolize the political entity – institutions such as a bureaucracy, an economy, the judiciary, universities, a civil service, and civil society organizations. Above all else, however, nation-building is about building a common sense of purpose, a sense of shared destiny, a collective imagination of belonging.

Nation-building is therefore a deliberate state effort to unify the people within a country so that it becomes or remains politically viable and stable over the long term. Nation-building clearly is a more scary challenge in post-colonial Nations, especially in territories that were primarily used by the colonial power to extract resources or obtain other economic benefits. Even in these days of globalization and rapid international flows of people and ideas, having a viable nation remains synonymous with achieving modernity. It is about building the institutions and values which sustain the collective community in these modern times. The importance of international relations in nation building has become a tool nations are willing use in order to pursue and implement into their domestic policies. The main objective of this article is to identify and place the importance of international relations not as an academic discipline, but as a viable tool of practice to nation building, which Nigeria can draw the lessons from China.

Conceptual Analysis

International Relations

The increasing human-relations in international communities has led to the establishment of treaties between nations which provide grounds for successful trade policies, travel related business, opportunities to enhance their lives and human culture through cultural exchanges, diplomacy and policy development. This development has resulted in continuous changes in all sphere of social lives of people. Many factors come into play that affect the nature of international relations such as evolution of new nations, technological development, nuclear research, rise of multipolar world, emergence of new order, non-state organizations, global problems, so and so forth (Goldstein & Pavese, 2008). However, From the academic perspective international relations or international affairs, depending on academic institution, is a field of study in political Science, an interdisciplinary focusing on patterns of global studies in between political entities (polities) such as state, sovereign state, empires, inter-governmental organizations (IGOs), international non-governmental organizations (INs), other non-governmental organization (NGOs), and multinational corporations (MNCs), and the wider world systems to produce interactions (Goldstein & Pavese,2008). International relations can also be positive and normative, because it analyses and formulates the foreign policy of a given state. International relations have been in existence for a long time from the ancient time to era of enlightenment. In the modern time, the scope has gone beyond the realm of political enquiry to the act of high politics among nation states. Today international relations have taken advantage of the act, practice of politics and communication to the highest level of intra and interstate relations.

International relations attempts to explain the interactions of states in the global interstate system, and it also attempts to explain the interactions of others whose behavior originates within one country and is targeted toward members of other countries. At the intrastate level international relations is an avenue of domestic interaction between the state and the citizenry. In short, international relations attempt to explain behavior that occurs across and beyond the boundaries of states on variety of issues from international political economy to security, migration, human rights and the environment to nation building (Elias & Sutch, 2007).

Nation Building

The phrase 'nation-building' has a lengthy history and is to address challenges of stability of a political system. Nation-building is constructing or structuring a national identity using the power of the state. The main task of nation-building is the unification of the people within a country to promote enduring stability. Policy makers are responsible for nation building process and they do so by taking the initiatives to develop through government programs, including military conscription and national content of mass schooling. Nation-building involves the use of propaganda or major infrastructure development to foster social harmony, economic growth and development (Dinnen, 2006; Riemer 2005; & Gambari, 2008).

Nation building has a lot of definitions depending on the context and application. It is often seen as the conscious and focused application of the people's collective resources, energies, and knowledge. It is the task of liberating and developing the psychic and physical space that they identify as theirs. It involves the development of behaviors, values, language, institutions, and physical structures that elucidate our history and culture, concretize and protect the present, the future identity and independence of the nation (Riemer, 2005). According to Suri (2011), nation building is a multi-step concept which has become a catchphrase in the past ten years. He defines nation-building as an effort to build institutions and practices that allow a people to govern in peaceful and prosperous ways. Nation-Building' process can be viewed from development perspective to entail three key elements:

(a) Firstly, the development of an effectively functioning state that is accepted – that is, accorded legitimacy - by the bulk of its citizens. Central to this are the functions of securing a monopoly of force, guaranteeing security for the population and neighbouring countries, the rule of law, and the provision of public assets. These are fundamental attributes of statehood and constitute a necessary foundation for 'nation-building'.

(b) Secondly, 'nation-building' also requires a physical, social and communications infrastructure that is shared by the entire civil society. These assets must be accessible for all groups of the population and be used by them for transactions and communication. It is difficult to build a sense of nation in a country containing regions or areas whose inhabitants are effectively cut-off – physically, mentally and socially – from the rest of the 'national' population.

(c) In addition to these conventional 'state-building' components, 'nation-building' further presupposes a socio-cultural structuring and integration process leading to shared characteristics of identity, values and goals. It is not so much the homogeneity of these characteristics that is crucial, rather it is the acceptance and toleration of heterogeneity and the facilitation of inclusion. Thus, nation building incorporates a functioning state, effective means of communication and sound integrating processes.

Therefore, on this, Suri (2011) suggested five principles for a successful nation building to include:

Partners: Nation-building always requires partners; there must be communication between people on the ground and people in distant government offices.

Process: Human societies do not follow formulas. Nation-building is a process which does not produce clear, quick results.

Problem-solving: Leadership must start small, addressing basic problems. Public trust during a period of occupation emerges from the fulfillment of basic needs.

Purpose: Small beginnings must serve larger purposes. Citizens must see the value in what they're doing.

People: Nation-building is about people. Large forces do not move history. People move history.

To achieved these processes all domestic gaps must be addressed before having a formal contact with the rest of the world. Having a healthy contact with the world will sustain the nation building process.

Nigeria's Challenges to Nation Building

Nations are integral part of modern society. Historically, the world was divided into empires and kingdoms. In the modern world, nations or nation states have replaced the old empires as the basic unit of human political organization. As an integral part of the modern world, therefore, Nigerians are rightly concerned about nation-building (Gambari, 2008). Nations just don't occur by historical antecedents; rather they are built by men and women with vision and resolve. Nation-building is therefore the product of conscious statecraft, not happenstance. Nation-building is always a work-in-progress; a dynamic process in constant need of nurturing and re-invention. Nation-building never stops and true nation-builder never rest because all nations are constantly facing up to new challenges (Gambari, 2008).

Nigeria is peculiar to her national importance as the 'Giant of Africa'. Not necessarily because of the quality of national institutions and values, but simply by virtue of the large population and oil wealth endowment in the country (Gambari, 2008). But in reality, the greatness of a nation has to be earned and not determined just by the size of its population or the abundance of its natural resources as other countries are striving harder to reach that level.

China and India have the largest populations in the world, but China does not depend on its population to attain the position it is occupying in the world growth today. China is obviously the biggest story out of Asia in terms of economic growth in recent decades, and the growth in China has been a driving force for the recovery from the global crisis since 2009. Harrison (2000), and Thornton (2007) helps us understand how Chinese nation-building emerged. However, it is less successful in accounting for the enormous socio-political diversity, which characterizes the histories that have contributed to producing what we call 'China' today. The territorial and social boundaries of what is called China today are quite different to what was called China in the 19th century. Therefore, a nation learning from China need to understand the different models for different regions of China, which have different experiences of Chinese rule and different social dynamics on the ground.

For a successful Nation's building in Nigeria, five possible challenges need to be addressed as noted by Gambari (2008); the challenge from our history; the challenge of socio-economic inequalities; the challenges of an appropriate constitutional settlement; the challenges of building institutions for democracy and development; and the challenge of leadership. Nigeria therefore, need to take a lift Chinese example of consolidating the gains of the domestic environment to project her image internationally for its Nation's building (Gambari,2008).

The China Example of Nation Building

Nation building process of China began in the ancient period to the early part of 20th century before the 1949 revolution that brought in Mao Zedong (Ceren, 2005). The Chinese nation building began in three periods based on the characteristics of the relationship between the ethnic groups that is more of production and economic activities towards self-sufficiency. The second period was more of a crisis situation affecting her sovereignty internally and externally (Wang, 2009)). The last period from 1949 is the establishment of their national identity (nationalism). According to Wang (2009) the history of China is preoccupied by

three tasks of nation building, that is, building to accompany projects in economic, social and international outreaches. Economically, this meant fast industrial development and achieving the status of an industrial power in the global community. Socially, it meant the reform of class structure, promoting the rule of law, constitutionalism, and the improvement of the public entitlement to food, basic education, and healthcare. Internationally, it meant safeguarding her sovereignty, gaining international recognition, and enhancing her global power status in the coming year. There is a strong historical link to China's rapid development to become one of the most successful economy and powerful nations in the world in 2009 (Wang, 2009). These achievements of China are the result of her effort to build its nation from the domestic environment before transferring it to the international system through healthy relations with members of the international community.

China is the most populated country in the world according to World Population Data Sheet Report of 2019 with 1.4 billion people. The implication of high population and lack of palliatives to cushion the effects in the internal environment is exemplified by environmental pollution, industrial accidents, and public protests as posited by Wang (2009). The will to rebuild the nation became a cardinal objective or a plan of action by the Chinese government to attain the growth and development of the nation. China has pursued the programme of development for a longtime couple with enduring conflicts like contextual issues of nationhood, reconstructing a distinctive cultural and ethnic identity of some sections of the country.

China's Nation Building Process

As the most populous nation on earth, the challenges to build an effective state must continue for years to come through an effective regulatory state for its economy to grow through good governance, sound and effective diplomacy. Nevertheless, the state continued to renew the nation-building discourse, putting one new project after another onto the national agenda. The industrial strengths of the nation remained rallying points for national attention. Tremendous resources have been put into a space program, for example. From the launch of an unmanned vessel in 1999, to the first manned mission in 2003 and the first space walk in 2008, the Shenzhou (1999) "divine vessel". This project served well to boost national confidence of the average Chinese citizens. The next goal is to land Chinese "taikonauts" on the moon (Wang,2009). Next on the list, building aircraft carriers and a blue-water navy, building the world's largest and fastest high-speed railway, building jumbo jets, and building the world's largest airport and longest bridge all speak to the State's "Strong Nation" project of industrialization a self-sufficient before exporting its technology to the rest of the world. These achievements were attained through the strong political will of the country's leadership and the expectations of the approximately 1.5 billion Chinese.

China engagement in regional and global institutions and frameworks gave her boost in her goal pursue. Additionally, the pursuit of strong nationhood was also preeminent in the success of Chinese diplomacy. Thus, the national confidence was restored to pursue her international relations.

Attaining Her Nation Building

At 60, China's "nation problem" seems to have resolved itself. China is now a world economic power, and is acknowledged as a major player on many issues of global importance. But overall, China's independent nationhood appears firmly established, and its "strong nation" status is internationally accepted. Chinese state has proved itself amazingly capable of generating economic growth and moving its population out of poverty by the

strong government structure and institutions very conducive to achieve the desire result of nation building through economic development.

According to Ichimura (2005) China has attained over 90% of her nation building process by fulfilling the conditions or road map to development. Switching from politics to management of the economy is very essential in national development. Maintaining a strong national cohesion will bring the willingness to open its door to the world, providing the basic human needs to accommodate her large population, becomes and ultimate priority of the Chinese revolution. China encourages local entrepreneurs (local content) with incentives to attract foreign direct investments into the country. To eradicate extreme income inequality, the differences between the upper and middle income classes are avoided. Major decisions of government and bureaucratic policy are to an extent left open and transparent. The current status in the economy of China was developed through sound industrialization policies, with legal framework of transactions by limiting restrictions to free trade and inflow of foreign direct investment. The place of education and engineering in Chinese nation building, were regarded as important avenues for graduates to be employed to form part of modernization process of sustainability.

Foreign Relations

China's foreign policy today is summarized as strategic relations with neighboring countries and the world's superpowers to strive for China's national interest, and to create a favorable environment for China's domestic development for perpetual competition in the world in the long-run. China is open to both developed and developing countries and has engaged in extensive international cooperation on the basis of equality and mutual benefit to promote common development. China is one of the world's largest developing country and a permanent member of the UN Security Council, stands ready to make unremitting efforts to ensure world peace and development. The 2001 admission of China into the World Trade Organization (WTO) have had a significantly positive impact on China's political and economic relations with the world (Longman, 2001 and Leonard et al. 2008 in Wang, 2009).

What Nigeria Could Learn from China

The Chinese ancient and modern history was plagued and resembled Africa in many ways. China was divided along primordial sentiments and foreign encroachment typical of Nigeria. China's leaders devoted more energy in addressing their domestic problems. Under Mao Zedong and the Communist Revolution, China was able to re-unify itself under a new political philosophy (China had been a monarchy), and take control of its people and its destiny. Since then, China has undergone a period of explosive economic growth, production, and evolution (Asad, 2016).

Nigeria and China were rank to be among the greatest economies of the 21st centuries together with India, Brazil and Singapore etc. China and India have occupied this position, leaving Nigeria struggling in her nation building process. The foundation of Nigeria's nation building process began aftermath of the civil war by the Gowon's regime (1970s). He laid the solid foundation for the future, yet successive regimes and administrations failed to build on the process laid by the administration. Instead they pursue foreign policies that fail to promote and support the process of nation building at home. According to Asad (2016) many Pan-Africans have discussed the concept of nation building among the populations of African descendants across the globe, but no clear way on how to achieve it. Unlike China whose concept of nation building includes a harmonious society, scientific development, and ethnic unification. China believed that work must start from the home front, before it can be

exported to the world through global interaction. This is the kind of concept that needs to be adopted, practiced, and worked for by every Nigerians.

Harmonious Society

The Chinese concept of a **harmonious society** describes the use of culture to influence the masses. For instance, music was considered to have the power to transform people into becoming more civilized, and it was the government's responsibility to set the correct direction for the lives of the people. The concept has been in practice for a long time from the time of Confucius, the Hu-Wen to the present to correct the highly unbalanced and socially unjust society that resulted from the Chinese obsession with economic growth as claimed by Asad (2016).

Work for Sustained, Rapid and Coordinated Economic Growth;

Sustainability focusses on equal economic growth that generates wealth for all, without harming the environment. Investment and an equal distribution of the economic resources will strengthen the other pillars of sustainability for a complete development. Working towards a sustained and inclusive economic growth is a prerequisite for sustainable development, which can contribute to improved livelihoods for people around the world. Economic growth can lead to new and better employment opportunities and provide greater economic security for all. Moreover, rapid growth, especially among the least developed and other developing countries, can help them reduce the wage gap relative to developed countries, thereby diminishing glaring inequalities between the rich and poor.

Creating a Scientific Development Concept

The Scientific Development Concept, or Scientific Development Perspective, is the current official road map to socio-economic philosophy fully endorsed by the Chinese government. Science and Technology hold the key to the progress and development of any nation. Technology plays a fundamental role in wealth creation, improvement of the quality of life and real economic growth and transformation in any society. Science and technology has generated new knowledge, such as discoveries of new principles, and has dramatically contributed to the development and progress of people's lives, the economy, and the society.

A post ideological vision of technocratic scientific government of China was driven by pragmatism, analysis, experimentation and empirical validation. Added to this were depoliticized, low public profile and collective and expert decision making. The policy was geared toward wide social gains in utility, not just economic growth but also addressing inequality and environmental damage

Conclusion

International relation is not all about talking, participation and improving diplomatic presence, but exploring what can be useful in building the nation. Nation building can only be attained when all gaps in the domestic political environment are addressed. The process of nation building in the modern era is not restricted on the developments at the home front alone, neither putting a solid structure. Nation building is about conscious and subconscious attitude toward sense of nationalism.

Many nations in the Northern hemisphere have succeeded in their nation building projects due to their attitude towards national identity first before the international system. Countries in the southern hemisphere only a very few have succeeded in their building process. China is

one of the typical examples moving from the status of developing to the developed world. The Chinese did not perform any form of magic, but their sense of patriotism and nationalism led them to success. They believe that the home must be developed first, any meaningful interactions with others is to bring ideals and innovations that can sustain the domestic environment in the process.

Nigeria is among the numerous countries in the south, battling with the process of nation building since independent; even when concrete foundation was laid by the Gowon led administration. What Nigeria is lacking is the same attitude the Chinese used in developing their nation building process by meeting the immediate need of its citizen as first priority. National stability can promote the speedy process to nation building and international recognition.

Recommendations

Nigeria can really achieve more in her nation building, but must learn from what China is currently doing at the global level to help her domestic environment.

- i. Nation building process must start from the home front where all interests are address.
- ii. Developing democracy, where people's opinions may fetch out their intelligence to be fully absorbed. With a democratic policy-making mechanism it will help balance different social interests and avoid social conflicts.
- iii. **Actively Enforce the Principle of Rule of Law**, the rule of law is important for the promotion, realization and safeguarding of a harmonious society. This principle should be rigorously implemented in all political, administrative and judicial sectors to ensure the powerful are checked and accountable for their misdeeds.
- iv. **Maintain Social Equity and Justice** as social equity and justice are key to bringing people's creativity and initiatives to full play, because people will not be happy without it. It is important to balance different interests and strive to ensure equality for all in terms of personal rights, opportunities, game-playing rules and wealth distribution

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