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ASSESSING RURAL COMMUNITIES' PROSPECTS FOR BIOGAS TECHNOLOGY ADOPTION AS CLEAN ENERGY SOURCE IN WAKISO DISTRICT, UGANDA

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ABSTRACT: *This study investigates the prospects for adopting biogas technology as clean energy by rural population in Wakiso district. Its main objective was to generate information on challenges and opportunities that exist locally for promoting biogas as an alternative source of energy in Wakiso district. A descriptive, explanatory and associational research designs was used in the study to collect information from the study areas. The design enabled qualitative and quantitative data collection and analysis of the variables under the study. It helped the researcher to obtain information in a shorter period of time. Qualitative data was obtained through questionnaires, interviews and observation while quantitative data was obtained through computation and analysis. The findings reveal that, a number of local factors influence biogas technology adoption. These factors include lack of technical services and high cost of maintenance. They led to non-adoption of biogas technology. For instance, lack of technical services was evidenced in non-completion or breakdown of biogas plants due to lack of maintenance services.*

KEYWORD: Clean Energy, Biogas, Adoption Challenges, Opportunities, Rural Community

INTRODUCTION

Energy serves humanity through provision of heat, electricity, preparing food, transportation and industrial processing. Enormous research work has been conducted on the subject and majority of studies carried out in Africa show significant disparities between the rural and urban settings due to challenges faced in putting up basic energy infrastructure (Jagan and Sundar, 2004). About 90% of rural population depends on wood fuel to meet their daily cooking energy needs (Muchiri, 2008). Biomass energy such as firewood, and charcoal, play a very important role in the basic welfare and economic activities in many sub Saharan African countries (Muchiri, 2008). According to the US department of energy (2001), total wood harvested for cooking in sub Saharan Africa is about 80%. It is estimated that in 2030, the number of people using wood fuel in Africa will increase by more than 40% to about 70 million people (Muchiri, 2008). This condition signifies available threat for human and climate security, and form a major barrier to advance in economic growth and poverty alleviation in sub Saharan Africa. In most developing countries, wood fuel and charcoal remain the major source of domestic energy, (UNDP, 2009) and a greater switch to clean energy source in the

long run seems unlikely (NEMA, 2007). Biomass is the major source of domestic energy for both rural and urban areas in Uganda. By the year 2050, Uganda will require 42.6 million tons of wood for household energy use for her estimated 55 million people then (Sebbit et. al., 2004).

This condition signifies that biomass future demand can assume to be proportional to population growth in Uganda. The consequences of over reliance on biomass energy have negative or adverse effects on the economic, social and environmental spheres of sustainability. Animals are an important source of food and income for many rural people here in Uganda, but their manure is a source of one of the world's most potent greenhouse gases. About 80% Uganda's population live in rural villages (NFA, 2009) where there are almost no alternatives to biomass fuel. The rural population is relatively poor and seriously affected by the depletion of their energy resources, especially firewood. This has put pressure on women and children and further heightens their vulnerability to falls and attacks during firewood collection. Historically, in Uganda Biogas technology have been present in Uganda since the 1950 (UDBP, 2010) and by 2008, the estimated number of systems was around 800 a great improvement over the 100 that were established to exist in 1990. The (UDBP, 2010) also point out that the main causes of biogas failure are due to limited skills by constructors of the systems and an inadequate operation and maintained by the household. According to the same source, the main challenge or barrier for the diffusion of this technology for starters have been lacks of technical capabilities and the comparatively high upfront cost. The use of biogas reduces the CO_2 emission through the reduction of the demand fossil fuel and enhances sustainable energy use in rural communities and its lower energy cost corresponds to a higher level of energy sustainability as it would propel energy access. A Castro-Gonzalez-Ingenieria's investigation (2016), according to Laramee and Davis (2013), biogas digester implementation has socioeconomic or environmental benefits. This source suggests that biogas adoption has the potential to reduce wood fuel use, energy related expenditures, and time cost of energy procurement; to low co2 emissions, and to increase farm incomes. According to Tafdrup (1995), Biogas systems can yield a whole range of benefits to the users including production of heat, light and electricity, transformation of organic waste into high quality fertilizer, improvement of hygienic and environmental conditions. In addition to the above benefits, biogas also improved Health and sanitation by reducing heath risk associated with continuous exposure to smoke (respiratory diseases) and improve hygienic conditions. Education and food security by providing quality lightening for children. Lightening that is better than that of traditional lightening (kerosene lamps) which enable them study longer hours during the night or evening.

MATERIALS AND METHODS

Research Design

This study applied a purposive design focusing on particular households where biogas projects have been implemented or initial attempts failed. It involved collecting qualitative and quantitative data through interviews, key informant interviews and observation checklist of guiding questions.

Study Area

This study was conducted in Nabweru sub-county and Naggabo sub county in Wakiso District. The district borders Nakaseke district and Luweero district to the north, Mukono district to the east, Kalangala district in Lake Victoria to the south, Mpigi district to the southwest and Mityana and Kampala district to the northwest. The town is in Kawanda Parish, Nabweru Sub-county, being one of the six parishes in that administrative unit. Kawanda is approximately 13 kilometers (8.1 mi), by road, north of Kampala, the capital and largest city in Uganda. This is approximately 247 kilometres (153 mi) south of Karuma Falls, on the Kampala-Gulu highway. The coordinates of the Kawanda are 0°25'14.0"N, 32°32'26.0"E (Latitude: 0.420556; Longitude: 32.540556). Namalere is a place with a very small population in the state/region of Kalangala, Uganda which is located in the continent/region of Africa. Cities, towns and places near Namalere include Bamba, Kiteezi, Tula and Kasangati. The coordinates of Namalere are; latitude 433333, Longitude 599994.

Kitezi, is located in Nansana Municipality, Wakiso district, off Mpererwe on Gayaza road.Nakyesanja is located in Kawanda along Bombo road, off Nanalere road. Wabitembe is located along Bombo road, 5 Kilometer away from Kawanda. Nansana is located on the main highway between Kampala and Hoima. The town is located approximately 12 km (7.5 mi), by road, northwest of Kampala, Uganda's capital and largest city. The site is located in Wakiso district, Nansana Town Council in Nabweru North.

Household Survey

A set of questionnaires was design to carry out the household survey. About 20 households in Wakiso district were interviewed and information gather was based on qualitative and quantitative data collection so that the both methods can complement each other. According to Bryman (2008), the strength of one method helps to overcome the weaknesses of another thereby achieving a cost benefit analysis balance. Key informant interviews, non-participant observations and Questionnaires administered to selected household heads were used in the study. The data variables included household socio-demographic characteristics, knowledge of biogas, local biogas production technologies, capital investments, benefits associated with biogas use and challenges in biogas adoption.

Sampling and Data Collection

A simple random approach was utilized to select the adult male and female members in different areas of the study, majorly from the selected area who use biogas, particularly from Kawanda (site 1), Kitezi (site 2), Nakyesanja (site 3) and Nabweru (site 4) in Wakiso district to represent other areas, as was chosen for the study. This helped to eliminate bias from Households with biogas plant or where previous attempts were made to adopt biogas use as clean source of energy.

We used questionnaire which comprised a set of written questions on sheet with spaces provided for respondents to reply to questions, which were administered in face –to- face interviews with respondents. The focus of the questions was placed on the availability of raw materials and relevant resources for biogas production and maintenance.

Figure 1: Illustration of Biogas Production and Use Experience of Local Communities

Data Analysis

The quantitative data was analyzed for mean frequencies and standard deviation using SPSS Software version 21 for windows xp and Microsoft excel. The analyzed data were interpreted and presented in tables, charts and graphs.

RESULTS AND DISCUSSION

The results show that 30 households had females as the majority respondents and on average the respondents aged between 29 and 34 years, which means the study comprised a group of individuals who are youthful and still hold great prospects for a better future. The findings also revealed that majority of the respondents had attained tertiary level of education, and hence were very much aware and knowledgeable on issues concerning energy use.

Table 1: Socio-Demographic Characteristics of Respondents

Variables	Frequency	Percentage
Sex		
Female	24	80%
Male	06	20%
Age		
18-25	07	23%
26-35	10	33%
36-45	08	27%
45+	05	17%
Education		
Post graduate	07	23%
Certificate holders	10	34%
Degree / diploma	13	43%
Occupation		
Farmers	18	60%
Employed	07	23%
Business	05	17%

The table above reveal that initial cost/ financial problems was the most important reasons why biogas technology has not been adopted in Wakiso. According to the respondents in the areas visited, it was found out that in Kitezi with a percentage of 20%, Nakyesanja with 17%, Wabitembe with 23% while Nabweru with 40% respectively and agreed by the respondents that those challenges lead to the failure of biogas technology in Wakiso District.

According to the findings presented in Table 2 some of the challenges faced by the residents of Wakiso district in accessing the biogas technology was that of inadequate resources for low-income earners. These include limited water supply, maintenance costs and lack of raw materials due to stolen cattle. The residents of Wakiso refore, in the areas visited, for example in Kitezi with a percentage of 16%, Nakyesanja with 31%, Wabitembe with 26% while Nabweru with 26% respectively.

Table 2: Reasons the Respondents Gave for Failure to Adopt Biogas Technology

Variables	Responses				% Total
	Site 1	Site 2	Site 3	Site 4	
Reasons for failure to adopt biogas technology					
Technical problems /services	2	1	1	1	16.67
Lack of cattle and men power to do physical work	1	3	4	6	46.67
Initial cost / financial problems	3	1	2	5	36.67
Challenges faced in accessing the biogas technology					
Law income	1	1	1	2	16.67
Limited water supply	1	3	2	2	26.67
maintenance cost	2	2	1	1	20.0
Lack of raw materials	1	3	4	3	36.67

Many factors were also found to be responsible for the low adoption levels. Family-sized biogas plants being labor intensive and yet operated by mainly family members, which implies that most households with few members had insufficient manpower to do the physical work. The average cattle herd size of most households was insufficient to produce the required cow dung for the digester. The problem of low number of cattle was compounded by theft of cattle in the area. The respondents were unanimous that they fear increasing the number of cattle holdings at household level due to lack of security. Thus, inability to get needed materials like animals' dung to generate gas for both cooking and lighting was resulting in a situation where people use unclean traditional sources of fuel such as charcoal and firewood. Results also shows that most households did not have adequate water supply. Water is equally an important raw material. Lastly, the maintenance costs for sustainable biogas energy generation in the study area, have often resulted in households abandoning the technology because of the inability of the biogas plants to generate sufficient and reliable cooking energy (Bhat et al., 2001).

Despite the many challenges cited, the respondents were aware of the economic, environmental and social benefits of using biogas as alternative energy source. Biogas energy was found to be a very fundamental resource to households where it has been adopted for use as source of energy. Its main applications to the users were cooking, lighting and generations of fertilizers. However, the technology adoption level in the district was quite low in spite of its potential benefits.

Table 3: Provides Highlight on Perceived Benefits of Biogas Technology

	Response Distribution				
Variables	**Site 1**	**Site 2**	**Site 3**	**Site 4**	**% Total**
Local opportunities for biogas adoption					
Economic and Environmental Benefits	5	3	4	2	46.67
Access to regular waste storage	2	2	1	1	20.0
Create market for sale of local materials	2	2	1	1	20.0
Organic fertilizers production	1	1	1	1	13.33

The Table 3 above shows respondents' awareness regarding economic and environmental benefits of biogas. They explained that benefits associated with biogas use were the most important reasons for adopting biogas technology. It also gives them the opportunity to have access to regular or better waste storage system and also improved sanitation, helps create market for local materials, opportunity of using local organic compost fertilizers. Most importantly, they were inspired by the fact that biogas has clean energy and produces no smoke, helps save other fuels. Furthermore, according to respondents from sub-locations we visited for this study, which are Kitezi with a percentage of 34%, Nakyesanja with 27%, Wabitembe with 23% while Nabweru with 16% biogas technology is affordable and cost effective in the long term. This points out that though other fuel forms would have been available, but there are reasons enough to inspire the installation of biogas plant and promoting biogas use locally as an alternative source of energy.

CONCLUSION

In conclusion therefore, biogas technology offered a myriad of benefits; social, economic, and environmental, and was a major driver of livelihoods in Kawanda, Namalere, Kitezi, Nakyesanja, Wabitembe, and Nabweru in Wakiso district. Its role and potential in positively transforming livelihoods, in poverty alleviation and in environmental protection cannot be emphasized. Efforts are required to create an environment that promotes the adoption of this technology. The evaluation of biogas energy has expanded and the body of knowledge in this area is increasing. This makes a contribution to the already existing body of literature in this field. On the basis of these study findings, it can be concluded that biogas technology and utilization in Uganda is both viable and sustainable. Empirical results are in conformity with the hypotheses that guided this study that adopting biogas technology and utilization, and biogas production is a profitable and sustainable venture in Uganda. Specifically, the probability of a household adopting biogas technology increases with increasing household income, increasing number of cattle owned, increasing household size, female head of household and increasing cost of traditional fuels.

Descriptive analysis of the findings shows that a number of factors had an influence on biogas technology adoption. Adopters of biogas technology revealed that initial cost/ financial problems, lack of cattle's/ raw materials, inadequate water supply, lack of technical services, low awareness on the value of biogas technology, and high cost of maintenance were the major factors that led to non-adoption of biogas technology. Non-adopters were of the opinion that

the high cost of initial installation of the biogas plants. The cost seemed too high for most respondents because their average monthly income is low. Low levels of education and average household monthly income are explained by poverty in the area.

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THE PROBLEMS AND CHALLENGES OF DEVELOPMENT CONTROL IN ABEOKUTA-WEST ZONAL PLANNING AREA, OGUN STATE, NIGERIA

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ABSTRACT: *Development control is a tool or a regulatory process for implementing any physical Development Plan. The development of land is always in haphazard manner that no adequate spatial pattern can be derived. This paper examines the problem and challenges of development control in Abeokuta –West Zonal Planning Area. Primary and secondary source were used. Questionnaire and personal interview were both used. The area was divided into nine zones which are classified into three (A, B and C), one zone is selected under each category as the sampling frame for the research study. 267 buildings was selected across the categories of zones in the study area using systematic sampling method. The various data collected through questionnaires and the responses obtained from the interviews were presented and analyzed through the use of descriptive statistics. The findings revealed the challenges; lack of physical development guide, inadequate manpower, corruption and political interference/instability. However, regulatory measures were recommended for the improvement on development control practice in the study area. These include: provision of framework as guide for physical development; effective public awareness and enlightenment programmes; adjustment of assessment charges for the low-income earners; and domestication of Nigerian Urban and Regional Planning Law 1992, especially at the Local level.*

KEYWORDS: Development Control, Physical Development, Regulatory Measures, Nigeria

INTRODUCTION

Development control is one of the measures applied by physical planning agencies particularly, local planning authorities to ensure that developers do not deviate from building plans approved for them in the course of implementation (construction) on the plot earmarked for such development (Oduwaye,2011). This is aimed at enhancing environmental quality, improved housing condition, privacy in residents and free flow of air among others. It is the process whereby the activities of developers; public and private, are regulated so as to achieve an orderly physical development. It is the system by which the use of land and buildings on the land are regulated such that misuse or abuse of use and non-conforming uses are prevented or checked (Wahab, 1994). The state of the physical environment, particularly the urban areas, is a major source of global concern; the concern is greater in respect of developing nations like Nigeria.

As the core of towns and cities are too crowded, this uncontrolled and unplanned urban sprawl is capable of impacting negatively on the environment as this can affect the aquifer, the ecosystem, pond life, wood land, soil erosion and recreational facilities, with people and vehicle in conflict while the peripheral areas (sub-urban areas) are sprawling fast (Ogundele

et al, 2010).This is why the issue of controlling physical development in our sub-urban settlements is crucial to the health of our cities. For instance, the sitting of incompatible development based either on the ground of social, economic or political interventions is a serious threat and very harmful to the co-existence of human and the other components of the built-up and developing sites. In sub-urban areas of Abeokuta, physical developments are springing-up at a very high rate as a result of rapid urbanization in the city-centers. People tend to reside at the outskirts of the city due to tremendous increase in land value and landed property at the central areas of Abeokuta (Bello *et al*, 2016). Against this background, this paper examines the problems and challenges of development control in Abeokuta.

Conceptual Anchor: Concept of Development Control

The paper adopted development control as a conceptual anchor. Ratcliffe (1978) defines development control as the formal voice of the planning authority regarding such matters as the permitted density, height limitations, user restrictions, access and outstanding preservation or conservation orders of one kind or another. He also sees development control as a process, which involves the regulation of the detailed aspects of physical development, about which precise guidance cannot be given in the master plan or the sub-division layout or local plan. While Onokerhoraye *et al* (1985); Oduwaye (2011) and Bello *et al* (2016) gave their definition of development control as the control of the use of land, the character, appearance, arrangement of buildings and facilities to ensure economy, convenience, slightly results and aesthetics.

Similarly, the Nigerian Urban and Regional Planning Degree No. 88 of 1992 describes development control as a physical planning instrument, which generally involves the regulations, retraining and keeping in order or checking materials' change on land. Its application tends to have a negative approach on development, while at the same time; it is a creative and permissive tool for development planning. In essence, it is a strategy employed by a physical planning agency for ensuring proper implementation of urban and rural development plans as well as regulating the flow of additions of infrastructural facilities. Moreover, it is a regulatory power exercised by planning agencies to either approve or reject a development application. It is a system by which the use of land and buildings on the land are regulated so that misuse or abuse of use and nonconforming uses are prevented or checked (Ogundele *et al*, 2010 and Bello *et al*, 2016).

The concept of development control or land use control is a collection of interrelated para-legal and administrative techniques, and instruments designed to safeguard, regulate, conserve or disburse land or part thereof in the interest of the overall community. Development control involves the regulation of the detailed aspect of development about which precise ordinance cannot be given by the development plan, so as to ensure convenient and slightly results. For instance, the regulation on the height of fence or the type of material for the side adjoining the street (Olajuyin *et al*, 1985). Therefore, the concept is a follow-up to physical development plan (or Master Plan), without it whatever is contained in the Master Plan will be difficult to achieve (Bello-Imam, 2016).

Development control can also be seen as a regulation of any building or re-building operations in, on and under the land, in order to prevent conflict and misuse of land as well as to promote harmonious interrelationship. It ensures that residential, commercial, industrial,

educational and other land uses are properly and carefully zoned, guided and developed (Ogundele *et al*, 2010).

Furthermore, development control attempts to check the activities of real estate developers and land users by ensuring that they do not develop or use their properties to the detriment of public interest in particular and the environment in general. Therefore, development control is an instrument of overall environmental quality control to the extent that it sets standards and regulations guiding the bulk and use of structures, as well as the air space around buildings (Olujimi *et al*, 2004).

Generally, there are two levels of development control, the macro and micro levels. At the macro level, the objective is to control the sub-division of land. This is the control of the development of layouts or sub-divisions and its aim is to ensure that the new areas are brought under urban use and influence, they form an integral part of the present over all urban structure and also fit into the future structure. While at the micro level, the objective is to control the development of the individual plot and structure within the sub-division (Onokerhoraye *et al*, 1985).

Agbola (1998) and Oduwaye (2011), looking at the concept, evolution, role of development control and planning administration in Nigeria, saw urban settlements as creations of contemporary societies. These settlements, according to them, have evolved overtime with a view to provide a more satisfying environment, in which urban inhabitants can live, work and pursue other goals that would enhance human dignity and lead to the attainment of a richer and fuller life. Since there are conflicts as to the most appropriate and most efficient use of urban land, they regard the evolvement, enactment and careful administration of land use or development control measures as a way of achieving urban settlement goals and at the same time resolving the conflicts that may arise from the pursuit of these goals.

Olujimi *et al* (2004) said in Nigeria, development control instruments include density control, zoning, building lines regulations, lighting, plot coverage ratio, building height regulations, type of materials for construction and many others. Having reviewed the existing regulatory instruments, he emphasized the need for new planning laws, regulations and standards that would be relevant to the country's socio-economic and cultural bias, which the new Urban and Regional Planning Decree of 1992 provided the answers.

The economics of development control is the concern of Olaore (1985) and Bello *et al* (2014). They opined that since it is not possible to assume that all urban developers are omniscient and thus the effect that public benefit will not be assured by a market economy; control is necessary. This prompted their vision of development control as a means of guiding development in such direction that will ensure that the sum of benefits accrue to a whole community is more than compensation for the total costs borne by it, transfer benefits and costs being excluded.

Egunjobi (1985) and (2010) looked at development control from the socio-cultural dimension. He identified two classes of human elements which include public officials' actions and the private or societal responses. He stated that the actions of public officials concern formulation and execution of planning control measures while the private or societal response has to do with adherence to or compliance with the guiding control measures. He identified lack of cooperation among different bodies involved in the planning process, lack

of coordination and official corruption as some of the problems associated with ineffective and inefficient development control measures.

He admitted that people are hostile to development control regulations. This, according to him, is attributable to lack of information, people's ignorance of the activities of the professionals and the benefits of development control measures. The identified problems on the side of the professionals include ignorance of what the people need and lack of or little communication flow between the professionals and the public. Thus, projects based on the control measures are at variance with people's cultural and psychological needs. Thus, the projects are often rejected and control regulations violated.

Some of the measures he suggested to improve the status-quo include the need to increase the intensity of public enlightenment campaign (public participated), access to documents on development control regulations by the public and the need to establish an inter-ministerial body involving the government agencies in planning, among others.

Akinade (1985) and Ayoade (2012) were concerned with lack of understanding of planning on the side of the public. They suggested that since planning has the objective of improving the well-being of the people, element of force has to be introduced into its enforcement. They however observed that the town planning laws in Nigeria are politically handicap, inadequate and negative in application. The magnitude of this problem is such that rather than having a positive report, planning is having a negative result. This is why the regulations are often defied. They stated some of the problems militating against effective enforcement of development control measures in the country. These include; political intervention, lack of cooperation among the members and staff of the planning authorities, disobedience by the citizenry, large scale interference by government ministries in the day to day operations of planning authorities and their parastatals among others.

With respect to administrative machinery for physical planning and development control in Nigeria, Ogundele *et al* (2010) observed that physical planning is still narrowly conceived as production of master plans for the orderly development of settlements and as layout of buildings and roads in urban areas. The reasons for this unwholesome situation as observed by him are not different from those earlier identified by previous authors. These reasons include mass illiteracy, lack of public enlightenment, influence of politics, poor finance and shortage of skilled manpower. Similarly, Onibokun (1985) and Oduwaye (2011) identified defective institutional framework and structure, poor financial base for planning, inadequate manpower, inter-ministerial, inter-governmental and inter- departmental conflicts as some of the constraints against effective administrative machinery for physical planning and development control. They proffered some measures to ameliorate this ugly situation, some of these include putting in place an administrative framework and a structure that facilitates physical planning administration and development control, zoning regulations, building and sub-division regulations as well as planning and design standards that re-current and responsive to the needs of the people. Others include provision of adequate manpower with appropriate education, experience, tools and fiscal resources necessary for innovating, monitoring and implementing development control.

Sanusi (2002) and Yahaya (2015), in their studies, looked at development control in line with good urban governance. They said development control is concerned with all urban land developers and users; it is also the base of maintaining environmental order and quality,

because of its universal application to all users and developers. Development control can be amenable to public participation; as a result, it should be seen as a practical component of urban governance. However, this is not observed in Nigeria urban centers. Element of bad governance such as rigid procedures have characterized development control. The resultant effects are illegal development, development of incompatible uses, development of ecologically unstable land, poor supply of urban land for various uses, problem of service ability of urban land and all forms of contravention characterized urban land development. Thus, they concluded that development control exercise in Nigeria lacks public participation and good governance.

They suggested that in order to make development control responsive and inclusive, it must be undertaken within the context of good governance, which will guarantee accountability, capacity building and liberalization in matters of urban land development.

The Context: Ogun State

Ogun State is situated within the tropics, covering about 16,400 square kilometers. It is bounded in the West by Republic of Benin (Dahomey), in the South by Lagos State and Atlantic Ocean, in the East by Ondo State and North by Oyo State (Figure 1.1). Abeokuta is the capital of the State and the largest town in the State. Abeokuta is located on latitude 7° 9′ 39″ North and longitude3° 20′ 54″ East,on the Ogun River**;** 64miles (about 94 kilometers) North of Lagos (Nigeria commercial nerve center and biggest, and most populated city) by railway, or 81miles by water and about 78 kilometers south-west of Ibadan, the capital of Oyo State (Ogun State of Nigeria, 2008).

The demographic results of these processes have been quite significant as evident in a population figure of 187,292 in 1963 increasing to an estimated 313,828 in 1980 and 376,884 in 1991. As of 2006 National Census, Abeokuta and the surrounding area had a population of 593,140 (National Population Commission). Within fifteen years (1991 to 2006) the population increased by 216,256 (57.4%).

The study area (Abeokuta-West Zonal Planning Area) is shown in Figure 1.5. This covers the western parts of Abeokuta, which include the core areas of the city such as Lafenwa, Ita-Oshin, Olomore, Ikija, Ikereku, Asero, Iberekodo, etc. and other peripherals of the city (sub-urban areas) such as Obada-Oko, Oke-Ata, Idi-Ori, Gbonogun, Mawuko, Bode-Olude, Soyoye, etc.Physical developments are springing-up at a very high rate in these sub-urban areas of Abeokuta because of affordable rate of land and rent in these areas, as people cannot affordthe high values of land/rentand landed property at the central areas of Abeokuta (Oke-Ilewo, Sapon, Ibara, Kuto axis, etc.).

Also, as a result of rapid urbanization in the city, there is competition for the land-uses in the city-centre. The needs for a larger or more economic activities to cater for the increasing population of Abeokuta lead to conversion of building and/or land uses in the central areas of Abeokuta. The land areas which were originally allocated for residential uses have been converted into commercial uses, the commercial activities have taken over the residential buildings, some of the buildings have been converted into office spaces, some are redeveloped while some are pulled down and reconstructed into a more profitable use like banking hall, office complex, insurance outlet and so on. This makes people (middle and lower-income earners) to relocate or reside at the Abeokuta-West Zonal Planning Area (the

study area), away from the city-centre. These movements of people to the study area are characterized by unpleasant growth, haphazard development, incompatible land-uses, illegal squatter developments, abuse of building-use, lack of planning schemes (layouts), erection of shops in available spaces, inadequate setback and airspaces.

However, the influx of people to the study area (Abeokuta-West Zonal Planning Area) calls for concern and planning attentions as any unauthorized development in this direction may lead to slum, building collapse, accessibility problem, unhealthy and unaesthetic environment, land dispute and petition, demolition of buildings, etc. which endanger human lives and properties

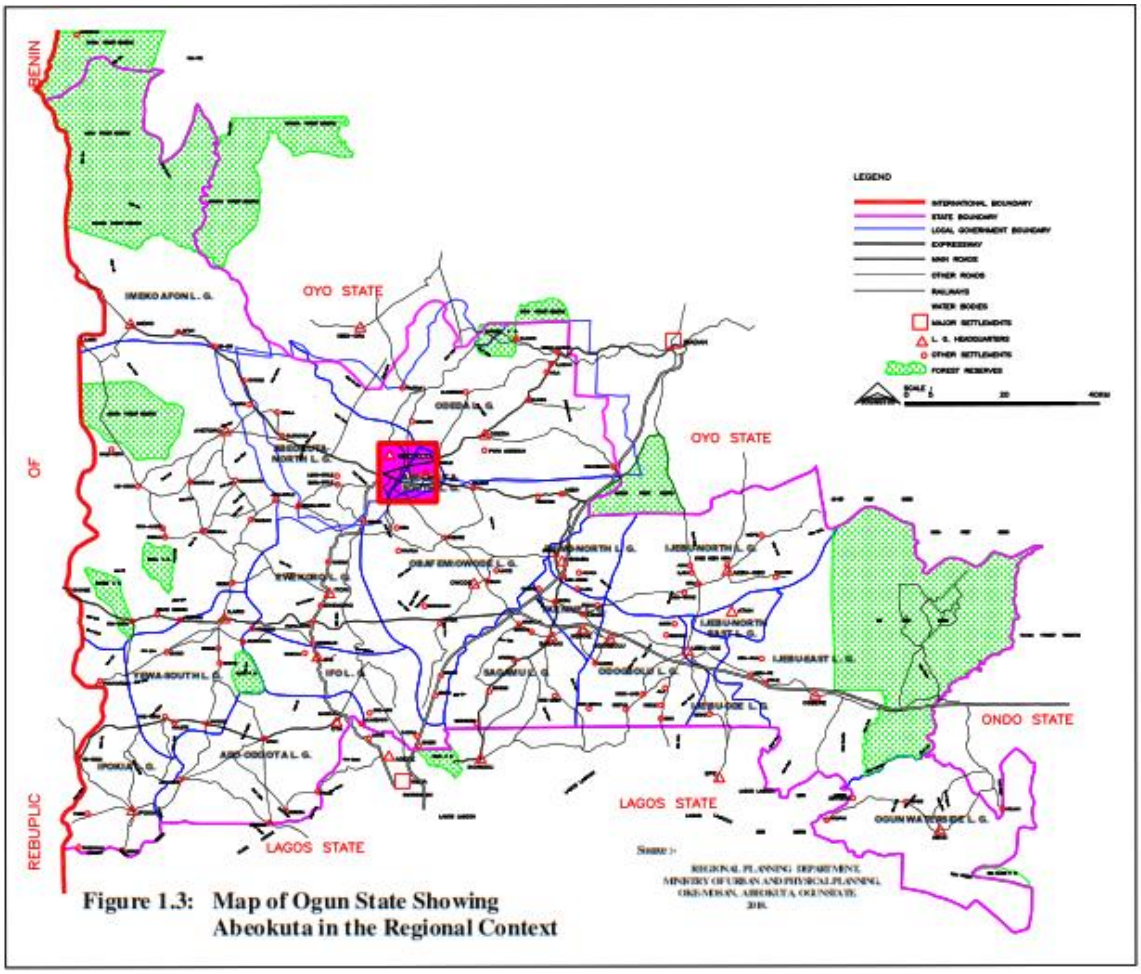

Figure 1.3: Map of Ogun State Showing Abeokuta in the Regional Context

MATERIALS AND METHODS

The data for this research were obtained from primary and secondary sources. The instrument of data collection for this research study is questionnaire and personal interview. Three sets of questionnaires were designed. The first questionnaire is structured and directed to the residents (building-owners) in the study area; the second questionnaire is structured and directed to the planning consultants and/or draughtsman practicing in the study area ;the third

questionnaire is structured and administered to the officials of Abeokuta-West Zonal Planning Office responsible for development control in the study area. In addition, with personal interview conducted with the government officials in-charge of development control practice in Abeokuta-West Zonal Planning Area of Ogun State.

The secondary data were also obtained from government planning agencies. Additional secondary data were sourced from exiting literature. Data were presented in tables.

Sampling Procedures

Multi-stage sampling method was adopted in order to avoid bias in the choice of items (buildings) in the study area, because the buildings inAbeokuta-West Zonal Planning Area are numerous and spatially located. In the first stage, the study area (Abeokuta-West Zonal Planning Area) was delineated into three categories of nine zones **(Table 1).** The second stage; one zone was selected from each category; this serves as sampling frame for the research study. Third stage; one unit or area was selected from each sampling frame for the administration of questionnaire (questionnaire for residents in the study area). The fourth stage; systematic sampling method was used to select the buildings from each selected unit or area for the administration of questionnaire. At the fifth stage; the selected buildings were considered as the sample size for this research study.

Sample Frame

The Abeokuta-West Zonal Planning Area is too large to cover for this study, considering the resources and time frame for this research work. However, for the purpose of selecting a suitable sample for this research work, the internal supporting structure that gives an artifact shape and picture of the study area is adopted. There are nine zones of areas under this study which are classified into three categories (A, B and C), one zone is selected under each category as the sampling frame for the research study (Table 1).

The selection of a zone, as the sampling frame for this research work, from each category in the study area is based on the following considerations:

- In category A, A3 zone was selected as the sampling frame for the research study because all the areas or units under this zone are at the outskirt of the study area and development is springing-up at a very high rate in this zone. Whereas, A1 and A2 zones consist of already built-up areas and Government Acquired Land (land acquisition). The rate of developmental activities (building operations) in these areas are minimal.

- In category B, B1 zone was considered as the sampling frame due to the fact that areas such as Oke-Ata, Idi-Mango and Olomore under this zone are experiencing rapid development in recent year. While B2 and B3 zones comprise of fully developed areas and Government Acquired Land.

- In category C, C2 zone was selected as the sampling frame for the research study. This zone consists of developing areas such as Bode - Olude, Old Igbo-Ora Road and Agborin Road. Meanwhile, C1 and C3 zones comprise of some core areas of Abeokuta metropolis (such as Iberekodo, Mokola and Ikija) and Federal Government Acquired Land - Mawuko Area.

Sampling Unit

An area or unit was selected from each sampling frame (Zones A3, B1 and C2), from which the sampling size for this research study was derived (Table 1). The selection of sampling units or areas (Obada-Oko, Oke-Ata and Bode-Olude) for this research study, from each category of zones in the study area, was based on their peripheral locations (outskirt of the Abeokuta metropolis) and development statuses. This provides a clearer picture of development control practice in sub-urban areas of Abeokuta metropolis (the study area).

Sample Size

However, in order to obtain adequate samples for the research studyfrom which inferences about the population could be drawn, systematic sampling technique is adopted. The starting point (nth of the building) is first picked and the next building is selected by adding the sampling interval (20) to the selected identification building. This process is repeated until all the buildings in each sampling unit are sampled. The selected buildings become the sample size (Table 1).

The sample size for this research study is 267 buildings which was selected across the categories of zones in the study area (Table 1). Field investigations were carried-out in these areas (Obada-Oko, Oke-Ata and Bode-Olude areas).

Also, the planning consultants and/or draughtsmen practicing in the study area were interviewed, as well as the Chief Executive Officer (CEO) and the Officers in-charge of development control in the study area. The findings and data collected were analyzed in the subsequent sections of this report to give direction to the research work.

Table 1: Sampling Procedures for the Research Study

STAGE 1	
Category	**Zones**
"A"	**A1** - Idiya Village Area, Obasanjo Farm Road and Sabo Area, From Lafenwa Railway Line - Right Side of Lafenwa/Aiyetoro Road Area. **A2** - Mile 2 Area, Badagry - Sokoto Road Area, Rander Area, Old Aiyetoro Road (Right Side of Alamala Barack), Right Side of Olorunda Area. **A3** - Idi Ori Area, Obada Oko Area (Across Left Side Lagos - Abeokuta Express Road), Left Side of Oke-Ata.
"B"	**B1** - Right Side of Oke-Ata Area, Ita-Oshin, Oke-Ata Housing Estate, Olomore Housing Estate, Left Side of Brewery, From Lafenwa Railway Line - Left Side of Lafenwa/Ayetoro Road Area. **B2** - Soyoye Area, Old Ayetoro Road (Left Side of Alamala Barack), Left Side of Olorunda Area. **B3** - Obada-Iyana Adigbe Area, Obada-Oko Area(Right Side Lagos -Abeokuta Express Way), Ita-Oshin Round About Area(Both Side), Top Brewery Area(Both Side), 2nd Bridge Round About Area(Both Side), Lafenwa - WEMA Bank Area(Both Side), Lafenwa Junction Area, After Bridge Lafenwa - Ago Oka Area, Ijaye Kukudi Area, Mokola Round About Area.

"C"	**C1** - Left Side Alogi Area, Gbonogun Area, Elega Federal Housing Area, From Elega Junction - Right Side Agborin Road Area, Ita Elega Market Area. **C2** - From Elega Junction - Left Side Agborin Road, Bode - Olude Area, Right Side Old Igbo Ora Road Area, Iberekodo Area, Mokola Round About. **C3** - Mawuko Area, Left Side Old Igbo Ora Road Area, Ikija Area, Ojokodo Area.	
STAGE 2		
"A"	**A3** - Idi Ori Area, Obada Oko Area (Across Left Side Lagos - Abeokuta Express Road), Left Side of Oke-Ata.	
"B"	**B1** - Right Side of Oke-Ata Area, Ita-Oshin, Oke-Ata Housing Estate, Olomore Housing Estate, Left Side of Brewery, From Lafenwa Railway Line - Left Side of Lafenwa Ayetoro Road Area.	
"C"	**C2** - From Elega Junction - Left Side Agborin Road, Bode - Olude Area, Right Side Old Igbo Ora Road Area, Iberekodo Area, Mokola Round About.	
STAGE 3		**STAGE 4**
Selected Units		**Selected Buildings**
"A"	**A3**- Obada Oko	107
"B"	**B1**- Oke-Ata	82
"C"	**C2** - Bode - Olude	78
STAGE 5 (Sample Size)		**267**

Source: Author Field Survey, 2018.

FINDINGS AND DISCUSSION

Development Permit and Socio-Economic Characteristics of the Residents

Opinion and belief of people towards development control practice is very important in achieving sustainable and conducive environment for living, working, recreating and worshipping. Majority of the residents in the study area are of the opinion that the cost of obtaining development permit (planning approval) is too expensive (Table 2). Thus, this prompted the statistical test of the correlation between the Development Permit and the Socio-economic Characteristics of the Residents in the study area.

The calculated Correlation Coefficient (r) is **0.976** and (Rs) is **1.00**. This indicates that there is significant relationship (positive correlation) between the development permit and the socio-economic characteristics of the residents. That is, the H_0 is rejected while the H_1 is accepted. The fact that the numerical value of the coefficient is very high (0.976), shows that the degree of correlation between the two sets of variables is high.

The implication of this is that only people (developers or landowners) with high and medium socio-economic status find it convenient or possible to apply for development permit (planning approval). The Abeokuta-West Zonal Planning Office should lay emphasis on development control measures or activities rather than generating revenue; this will have a great positive impact on the comfort, convenience, aesthetic and safety of the people (residents) in the study area.

Table 2: Reasons for Building without Development Permit

Reason	Frequency	Percentage (%)	Cumulative (%)
Not aware of it	6	3.3	3.3
It is too expensive	168	91.8	95.1
Application was not approved	2	1.1	96.2
Land is within acquisition	4	2.2	98.4
Others (kickbacks)	3	1.6	100.0
Total	**183**	**100.0**	

Source: Author Field Survey, 2018.

Assessment of Physical Condition of the Study Area

Development control measures also aimed at ensuring safety, comfortable, healthy, aesthetic and pleasing environment for dwellers. This led to the assessment of physical condition of the study area. The residents of the study area revealed their satisfactory levels, through the field survey, about the physical environment. 12% of the residents in the study area are very satisfied with the condition of their physical environments, 38.6% of them are satisfied with the physical condition of their areas while 13.5% of them are indifferent in their decisions. The satisfaction was drawn from frequent power supply in Zones "A" and "B" and their social attachment to the study area.

However, 31.5% of the residents are dissatisfied, while 4.5% of them are very much dissatisfied with the physical condition of their environments; especially residents that are located within Zone "C" (Table 3).

Table 3: Residents' Satisfactory Level with the Physical Condition

Study Area	Satisfactory Level with the Physical Condition										Total
	Very Satisfied		Satisfied		Indifferent		Dissatisfied		Very Dissatisfied		
	No	%	No	%	No	%	No	%	No	%	
Zone "A"	21	7.9	54	20.2	14	5.2	18	6.8	-	0.0	107
Zone "B"	11	4.1	29	10.9	13	4.9	22	8.2	7	2.6	82
Zone "C"	-	0.0	20	7.5	9	3.4	44	16.5	5	1.9	78
Total	**32**	**12.0**	**103**	**38.6**	**36**	**13.5**	**84**	**31.5**	**12**	**4.5**	**267**

Source: Author Field Survey, 2018.

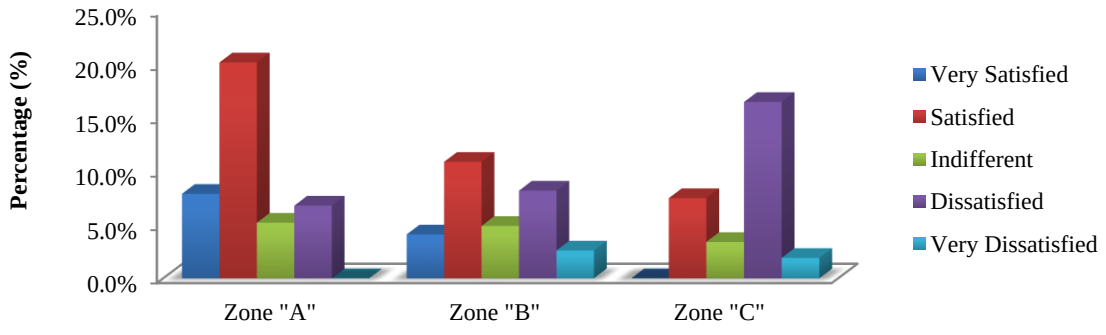

Figure 2: Residents' Satisfactory Level with the Physical Condition

Assessment of Procedure for Obtaining Development Permit

Procedure for obtaining development permit is a process that every intended developer(s) would undergo. The residents of the study area were asked to express their levels of satisfactory in the procedure and time frame for obtaining development permit. Only, the residents with development permit, that can easily assess the services of the Planning Authority and the duration involved in the processing of the approval, responded to this question. As it was revealed, Table 4 and Figure 3 show that 7.1% of the residents with development permit were very satisfied with the procedure, 34.5% of them said they were satisfied and none was indifferent in his decision. Majority of them (47.6%) were dissatisfied, while 10.7% were very much dissatisfied with the procedure for obtaining development permit (planning approval).

Although no one can satisfy man, but then when it becomes obvious that majority is not satisfied then, it calls for concern. This was as a result of high level of assessment charges or fees, high rate of charges involved in obtaining required documents (such as Stamp Duty, Survey Plan, Building Plan and Tax Clearance) needed for Approval and delay in the process (bureaucratic bottleneck).

Table 4.: Satisfactory Level with the Procedure for Obtaining Development Permit

Study Area	Satisfactory Level with the Approval Procedure										Total
	Very Satisfied		Satisfied		Indifferent		Dissatisfied		Very Dissatisfied		
	No	%	No	%	No	%	No	%	No	%	
Zone "A"	2	2.4	10	11.9	-	0.0	16	19.0	3	3.6	31
Zone "B"	-	0.0	4	4.8	-	0.0	13	15.5	6	7.1	23
Zone "C"	4	4.8	15	17.8	-	0.0	11	13.1	-	0.0	30
Total	**6**	**7.1**	**29**	**34.5**	**-**	**0.0**	**40**	**47.6**	**9**	**10.7**	**84**

Source: Author Field Survey, 2018.

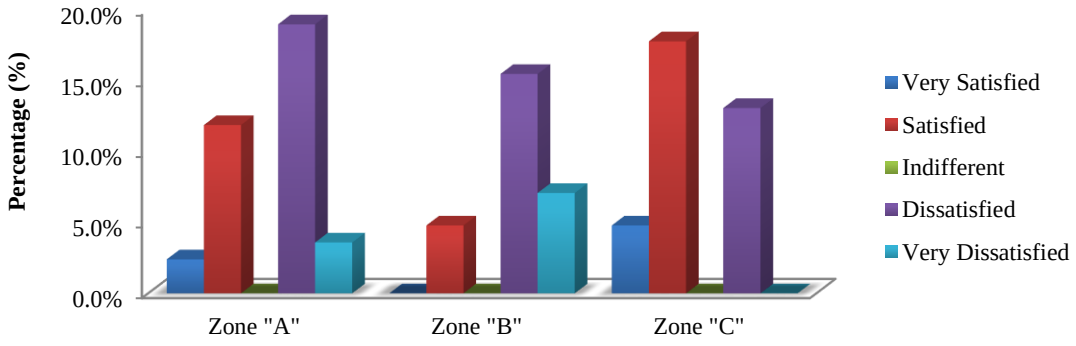

Figure 3: Satisfactory Level with the Approval Procedure

Conformity of Building to the Approved Building Plan

The field survey revealed that there is fair level of conformity between the erected buildings (buildings with development permit) and the Approved Building Plan (planning standards). Some of the buildings constructed are different from what is approved, especially buildings on major roads where frontages are used for row of shops (commercial purpose). The reason for this is basically lack of proper monitoring during implementation stage, the monitoring officers in the Development Control Department (DCD) are charged with this responsibility.

Table 5 shows the details of conformity, average of the total number of buildings with development permits conform to the planning standards. 51.2% of these buildings observed the required statutory setback from the adjacent road, while 48.8% of them do not. In terms of airspace, 48.8% of them conform to the standard, but 51.2% do not observe the required airspace. More than average of these buildings, 58.3% precisely, conform to the plot coverage requirement while 41.7% do not. Household utilities such as toilets, bathroom and kitchen are available in all the erected buildings with development permit in the study area.

Table 5: Conformity of Erected Buildings with Approved Plan

Planning Standards	Zone "A"				Zone "B"				Zone "C"			
	Yes		No		Yes		No		Yes		No	
	No	%	No	%	No	%	No	%	No	%	No	%
Set-back from adjacent road	12	14.3	19	22.6	14	16.7	9	10.7	17	20.2	13	15.5
Set-back from property line	14	16.7	17	20.2	15	17.9	8	9.5	16	19.0	14	17.9
Plot Coverage	18	21.4	13	15.5	17	20.2	6	7.1	14	16.7	16	19.0
Accessibility	31	36.9	-	0.0	23	27.4	-	0.0	30	35.7	-	0.0
Airspace	11	13.1	20	23.8	18	21.4	5	6.0	12	14.3	18	21.4
Room Size (10ft x 12ft) or (3m x 4m)	19	22.6	12	14.3	21	25	2	2.4	11	13.1	19	22.6
Window Size (1.8m x 1.2m) or (1.2m x 1.2m) for Cross Ventilation.	15	17.9	16	19.0	18	21.4	5	6.0	13	15.5	17	20.2
Availability of Toilet, Bathroom and Kitchen, etc.	31	36.9	-	0.0	23	27.4	-	0.0	30	35.7	-	0.0

Source: Author Field Survey, 2018.

However, out of the 31.5 percent residents that obtained development permit in the study area, 15.6% deviated from the planning approval, that is, deviated from the Approved Building Plan obtained from the Planning Office (Table 5). This can be said to contradict physical planning standards (Oduwaye, 2011).

View of the Planning Consultants in the Study Area

Planning consultants operating within the study area were questioned and interviewed as stakeholders in the environmental development. Their responses and findings revealed number of briefs and clients per month, duration for processing development permit (planning approval) and effectiveness of the Abeokuta-West Zonal Planning Office in the administration and control of development in the study area.

Planning Consultants Duration of Operation in the Study Area

The field survey revealed that 36.8% of the Consultants have been operating within the study area for more than a year. 31.6 percentof them have been operating within the area under study for more than 5 years, while 21.1%and 10.5% of them have been operating as consultants in the study areafor more than 10 years and 15 years respectively (Table 6).

However, the implication of their length of operations in the study area is that they have enough experience in relating with the developers and the Planning Authority (Abeokuta-West Zonal Planning Office). This makes them to know the challenges facing the Planning Authority in exercising development control measures and the reasons or ways to make the developers or landowners (residents) of the study area to comply to those measures or vice versa.

Table 6: Planning Consultants Duration of Operation in the Study Area

Duration of Operation	Frequency	Percentage (%)	Cumulative (%)
Less than a year	-	-	-
1 – 5 years	14	36.8	36.8
6 – 10 years	12	31.6	68.4
11 – 15 years	8	21.1	89.5
Above 15 years	4	10.5	100.0
Total	**38**	**100.0**	

Source: Author Field Survey, 2018.

Clients and Planning Brief serviced by Consultants in the study area

The field survey revealed that 50% of the consultants receive up to 5 planning briefs per month. 31.6% of them receive between 6 and 10 planning briefs per month, 13.2% receive between 11 - 15 enquiries from the clients (planning briefs) per month. 5.3% of them receive between 16 and 20 planning briefs per month, while none of the consultants receive above 20 planning briefs per month (Table 4.29). This analysis shows that there is pressure on land for physical development in the study area, especially in residential buildings.

Table 7: Clients and Planning Briefs Serviced by the Consultants (Monthly)

Clients and Planning Brief	Frequency	Percentage (%)	Cumulative (%)
1 – 5 Planning briefs	19	50.0	50.0
6 – 10 Planning briefs	12	31.6	81.6
11 – 15 Planning briefs	5	13.1	94.7
16 – 20 Planning briefs	2	5.3	100.0
Above 20 Planning briefs	-	-	
Total	**38**	**100.0**	

Source: Author Field Survey, 2018.

Planning Briefs Submitted by Consultants as Proposal for Approval (Monthly)

The field survey also revealed that in spite of many briefs received, few ended up being submitted as proposals to the Planning Authority. Table 8 shows the detail analysis of the planning briefs submitted for Approval: 55.3% of the consultants submit between 1 - 5 proposals out of many planning briefs received monthly, 34.2% submit between 6 – 10 proposals (applications) monthly for Approval, while 10.5% of them submit between 11 – 15 proposals. Whereas, none of them submit above 15 proposals (applications) per month. The reason for this is that some of the planning briefs received by the planning consultants could either not bedesigned in conformity with the planning standards or there is no financial response from the clients.

Table 8: Planning Briefs Submitted by Consultants as Proposals for Approval

Proposals Submitted (Monthly)	Frequency	Percentage (%)	Cumulative (%)
1 – 5 Planning briefs	21	55.3	55.3
6 – 10 Planning briefs	13	34.2	89.5
11 – 15 Planning briefs	4	10.5	100.0
16 – 20 Planning briefs	-	-	
Above 20 Planning briefs	-	-	
Total	**38**	**100.0**	

Source: Author Field Survey, 2018.

Reasons for the Low Response of Application for Approval (Consultants' View)

The planning consultants gave reasons for the low response of application for planning approval. 84.2 percent of the consultants said the cost of securing the approval is the major reason for low response to application, 10.5% of them said the time lag for processing the approval, while 5.3% said additional payment of penalty charges among other reasons (Table 9). This affects the number of development permit (planning approval) for buildings investigated or surveyed.

Table 9: Reasons for the Low Response of Application for Approval

Reasons	Frequency	Percentage (%)	Cumulative (%)
Cost of Securing Approval	32	84.2	84.2
Time Lag of Processing	4	10.5	94.7
Additional Penalty Fees	2	5.3	100.0
Total	**38**	**100.0**	

Source: Author Field Survey, 2018.

This analysis (Table 9) attests to the fact that majority of the residents(building-owners) in the study area find it difficult to apply for development permit (planning approval) due to their socio-economic statuses. As it was revealed in the outcome of second hypothesis (Appendix V), i.e. there is significant relationship (positive correlation) between the development permit (planning approval) and the socio-economic characteristics of the

residents, which confirms that the cost of obtaining development permit is the major reason for the low response of application for planning approval.

Duration of Obtaining Planning Approval by the Consultants

The field survey revealed that the period for obtaining development permit varies, depending on the peculiarities of each application submitted. The statutory period for obtaining development permit (planning approval) is within three months. Table 10 and Figure 4 show the duration of obtaining development permit, as revealed by the field survey, 7.9% of the consultants said they processed application and obtain approval within two weeks, more than average (52.6%) said it took them within 3 – 4 weeks to obtain planning approval. While 39.5% of the consultants stated that it took them above 4 weeks to process applications for approval.

However, as earlier stated, the consultants confirmed that the period of processing and obtaining development permit (planning approval) varies based on the perfection of required documents, the land-use type and other parameters that are required for the processing.

Table 10: Duration for Obtaining Planning Approval by the Consultants

Duration	Frequency	Percentage (%)	Cumulative (%)
Less than a Week	-	0.0	0.0
1 – 2 weeks	3	7.9	7.9
3 – 4 weeks	20	52.6	60.5
Above 4 weeks	15	39.5	100.0
Total	**38**	**100.0**	

Source: Author Field Survey, 2018.

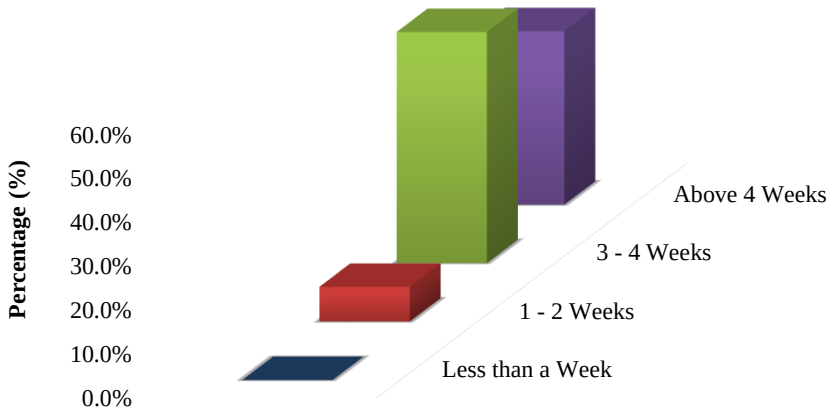

Figure 4: Duration of Obtaining Development Permit

Effectiveness of the Abeokuta-West Zonal Planning Office (Consultants' View)

In the field survey, the consultants were asked to assess the effectiveness of Abeokuta-West Zonal Planning Office (ABWZPO) in the administration and controlling of developments in the study area. Table 11 and Figure 5 show their responses, as revealed in the field survey,15.8% of the consultants said the Planning Office is very effective. While 36.8% of them stated that the Planning Office is effective in controlling development, 47.4% declared that the ABWZPO is not effective enough in the administration and controlling of development in the study area.The major reason for this is inadequate man power and necessary development control tools to work effectively. This implies that the Planning Office under study needs room for improvement.

Table 11: Effectiveness of Abeokuta-West Zonal Planning Office (Consultants' View)

Effectiveness	Frequency	Percentage (%)	Cumulative (%)
Very Effective	6	15.8	15.8
Effective	14	36.8	52.6
Not Sure	-	0.0	0.0
Not Effective	18	47.4	100.0
Total	**38**	**100.0**	

Source: Author Field Survey, 2018.

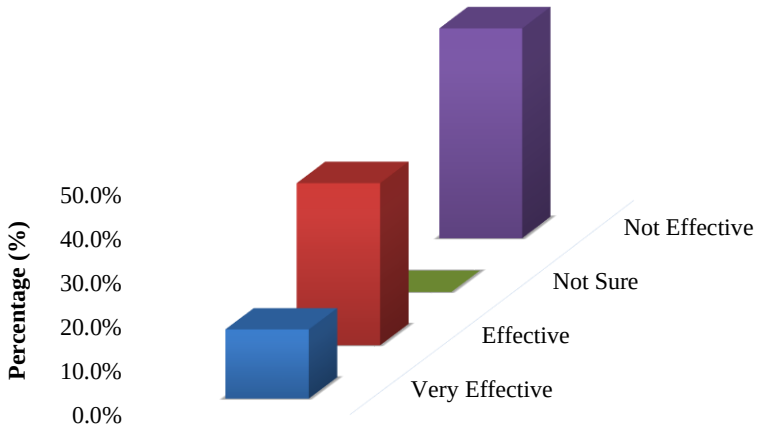

Figure 5: Effectiveness of ABWZPO (Consultants' View)

Evaluation of Abeokuta-West Zonal Planning Office

In order to assess Abeokuta-West Zonal Planning Office (ABWZPO), there is need to look into its work force and their activities, response to applications for development permit (planning approval) and challenges confronting the Planning Office, as sought by the questions answered by the Chief Executive Officer (CEO) of ABWZPO and the officials/Officers in-charge of development control practice in the study area.

Staff Strength and Equipment of the Planning Office

The field survey revealed the staff strength of Abeokuta-West Zonal Planning Office (ABWZPO). Out of the work force, seven (7) are town planners including the CEO, covering the entire study area. Table 12 shows the breakdown of all the staff working presently in the Planning Office.It is obvious that the staff strength of Abeokuta-West Zonal Planning Office (ABWZPO)could not cope with the estimated area under study.

Table 12: The Staff Strength of Abeokuta-West Zonal Planning Office

Workers	Number	Duties/Responsibilities
Town Planners	(7)	
• Chief Executive Officer	1	• Plan Approving Officer
• Recommending Officers	3	• Recommending Plan for Approval or otherwise
• Site Inspectors	3	• Site Inspection
Surveyor	1	Charting and Land Information
Architect	1	Checking of Architectural Drawings
Engineer	1	Checking of Structural Drawings
Accountant	2	Collection of Revenue or Assessment Fees
Clerical Officers	2	Assisting in Office Works
Driver	1	Driving of Vehicle
Cleaner	1	Keeping the office clean
Total	**16**	

Source: Author Field Survey, 2018.

Response to Application for Development Permit (Planning Approval)

The previous sections and sub-sections of this chapter have assessed the development control practice in Abeokuta-West Zonal Planning Area of Ogun State. It is very necessary to assess the level of compliance, increase or decrease in response to application for development permit in the Planning Office. Table 13 shows the increase and decrease in numbers of applications approved by the ABWZPO from 2007 to 2017, as revealed by the field survey, which indicates a fluctuating situation in the development permit (planning approval) process.

Table 13: Applications Approved by ABWZPO from 2007 to 2017

Months	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
January	38	69	49	27	18	82	38	12	41	20	28	**422**
February	39	96	68	29	46	133	48	31	46	31	49	**616**
March	41	78	54	39	61	35	121	9	25	32	54	**549**
April	41	97	47	41	89	43	32	9	12	22	26	**459**
May	55	77	38	37	49	46	28	7	27	30	29	**423**
June	30	81	99	57	71	67	49	5	35	65	46	**605**
July	42	103	55	57	71	67	55	38	38	28	46	**600**
August	69	74	53	67	52	152	12	20	29	30	37	**595**
September	46	40	62	42	75	8	6	22	30	35	48	**414**

October	56	9	64	57	41	6	8	39	28	34	43	**385**
November	81	35	82	55	71	40	46	46	29	49	39	**573**
December	92	44	168	135	134	61	4	56	35	48	26	**803**
Total	**630**	**803**	**839**	**643**	**778**	**740**	**447**	**294**	**375**	**424**	**471**	**6,444**

Source: Extracted from Annual Progress Report of Ogun State Urban & Regional Planning Board, 2007 – 2017.

Challenges Confronting Abeokuta-West Zonal Planning Office

The Planning Consultants, Chief Executive Officer (CEO) and Officials/Officers in-charge of development control practice in the study area were asked to state the challenges confronting the Abeokuta-West Zonal Planning Office (ABWZPO) in the delivery of their duties in terms of development control. The challenges stated among others are:

- Inadequate man-power
- Lack of working tools
- High risk to life of the officers
- Non-availability of planning schemes or any other framework to guide development.
- Administrative bottlenecks
- Harassment of officers during inspection.
- Inadequacy of public participation.
- Corruption, poor attitude of inspectors or officers to work.
- Political interference and instability.

The field survey revealed that lack of planning scheme to guidephysical developmentin the study area makes it difficult for ABWZPOto take decision on compatibility of land-uses. However, the Planning Office make it mandatory for individual or group of developers with large parcel of land to submit layout plan for approval, but few individuals comply with this regulation (Field Survey, 2018). This leads to disjointed layouts or developments that are conflicting (i.e. incompatible landuses) within the study area, the CEO of the Planning Office confirmed that developments do not conform to approved layout plans in some areas where there is one.Hence the need to encourage physical development schemes or layouts in the study area.

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PRIVATE SECTOR CREDIT - ECONOMIC GROWTH NEXUS IN UGANDA (2000-2018): A FULLY MODIFIED OLS ANALYSIS

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ABSTRACT: *This study analyses the the private sector credit -economic growth nexus in Uganda using the Fully Modified Ordinary Least Square (FMOLS). The method was applied to quarterly data spanning from 2000: Q1 to 2018: Q4. We found a cointegrating relationship between economic growth and its selected determinants. Amongst others, findings from the error correction model confirmed a positive and statistically significant effect of private sector credit on output. In view of the financial intermediation roles of deposit money banks, the paper supports the ongoing efforts of the Central Bank of Uganda (BoU) in promoting a sound and real sector-friendly financial system. Also, the commitment of the bou to the gradual reduction in interest rates is meaningful for the country's growth objectives.*

KEYWORDS: Private Sector Credit, Economic Growth, Cointegration, Ols Analysis, Uganda

JEL Classification: C01, C32, E44, G17, G21

INTRODUCTION

Private sector Credit can be defined as financial resources provided to the private sector, such as loans and advances, purchases of non-equity securities, trade credits and other accounts receivable, which establish a claim for repayment. Economic growth is the endless improvement in the capacity to satisfy the demand for goods and services, resulting from increased production scale, and improve productivity (innovations in products and processes) which is usually measured over a certain period of time. In other words, it is the measurement of annual percentage increase in real GDP over a certain period of time.

No matter what perspective Economic growth is viewed indicates the ability of an economy to increase production of goods and services over a certain period of time using the available factor inputs such as capital and labour (Aliero, 2013). The discussion on the role of finance in economic development is so far inconclusive especially in developing countries like Uganda. The theoretical benchmark dates back and may be traceable to the work of Schumpeter (1934), Mckinnon (1937) and Shaw (1973) in the finance-led economic growth.

Ssebatta (2015) investigated the ddeterminants of commercial banks' credit to the private sector in Uganda over the period of 1997-2013. His study reported that studies reported that domestic credit to private sector is instrumental in increasing per worker output and hence promoting economic growth in the long run. Specific research works on the nexus between private sector credit and economic growth in Uganda have not been able to use econometric analysis and according to the researcher's best knowledge, no research work on the private sector credit -economic growth nexus have adopted the recently developed Fully modified

Ordinary Least Square (FMOLS). This provides the background motivation to conduct this study in Uganda. The paper seeks to fill this gap in developing countries especially Uganda.

During the years 2000 – 20I8, private sector credit for Uganda has been generally moving in an upward direction with the highest of 11679.80 billion shillings recorded in the third quarter of 2015 as indicated in figure 1

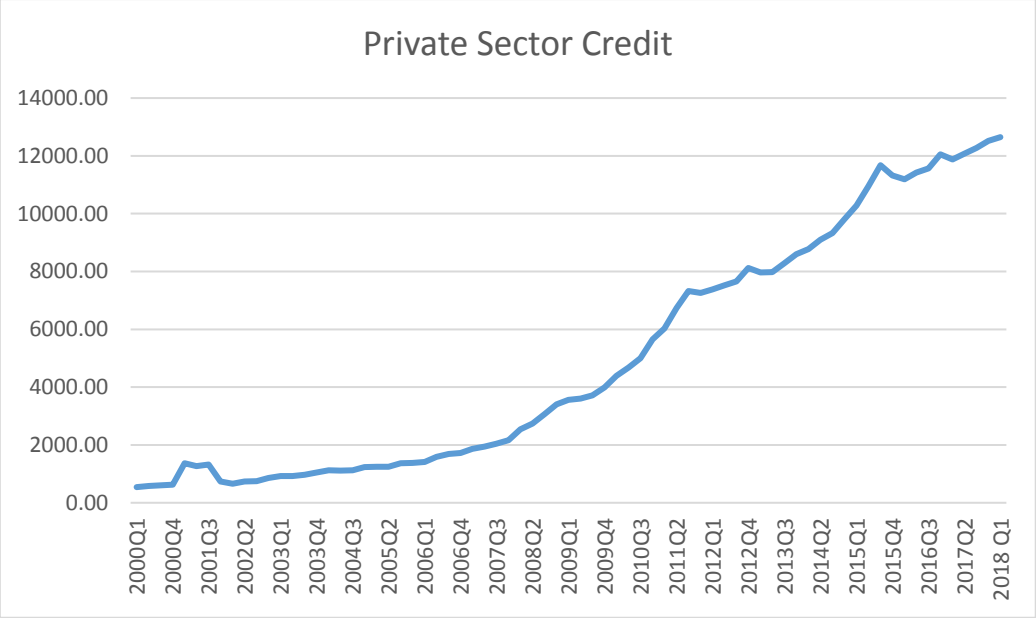

Fig 1: Trend of Private Sector Credit (2000-2018)

The figure above indicates how private sector credit has been changing. Together with changes in other variables, they perhaps have influenced the economic growth of Uganda. Uganda Bureau of Statistics (UBOS) released the final estimates for Gross Domestic Product (GDP) for FY 2017/18 which indicated that the economy expanded by 6.1 percent. This is an upward revision from the 5.8 percent growth that had been estimated in June 2018. The total stock of outstanding private sector credit increased by 1.3 percent to Shs 13,553.5 billion in August 2018 from Shs 13,379.0 billion in the previous month.

Most of this expansion was recorded in the stock of foreign currency denominated credit which grew by 2.7 percent from the equivalent of Shs 4,913.2 billion in July 2018 to Shs 5,043.8 billion in August 2018. The stock of shilling denominated credit also expanded by 0.5 percent during the month from Shs 8,465.8 billion in July 2018 to Shs 8,509.7 billion in August 2018. Lending institutions disbursed credit worth Shs 1,045.1 billion to the private sector in August 2018 which partly accounts for the growth in the stock of outstanding private sector credit. There was increased demand for credit by the private sector when compared with the previous month as value of loans applied for increased by 50.9 percent although only 56.1 percent of this was approved.

Important to note is the fact that the Uganda Shilling depreciated by 1.9 percent against the United States Dollar, recording an average midrate of Shs 3,800.68/USD in September 2018 compared to the average midrate of Shs 3729.53/USD recorded for August 2018 as demand for the US Dollar from manufacturing, oil and telecommunications sectors outmatched its supply during the month. Also, Annual Headline inflation reduced from 3.8 percent in August 2018 to 3.7 percent in September 2018, mostly attributed to price reductions for a number of food crops and related items. Core Inflation, on the other hand, continued to rise registering 3.9 percent for the year ended September 2018 up from 3.5 for the year ended August 2018.

The paper is divided into five sections. The foregoing section is this introduction. Section 2 reviews the related empirical studies. Section 3 presents our econometric models and methodology. Section 4 is the data used in the study. Finally, section 5 discusses the results and offers policy recommendations.

LITERATURE REVIEW

Private sector usually plays a key role in the process of economic growth of both developed and developing countries world over. This means that commercial banks and other financial institutions can use the possible channels to transform the deposits from the surplus spending unit to other forms of financial assets.It is worth noting that following the world economic depression of 1930 which impacted negatively the economic growth and developing of economies world over, the public sector has received immerse interest in financial sector literature(Jan and Syed ,2002). This is based on the fact that public sector plays a bigger role either directly or indirectly. Different scholars have argued differently about private sector credit as explained in the forth coming paragraphs.

Gaffar (2014) in his study about the impact of Private Sector Credit on Saudi Arabia Economic Growth (GDP): An Econometrics Model Using Auto- regressive Distributed Lag (ARDL) Approach to Cointegration argues that financial institutions play a key role in filtering information by screening borrowers and asymmetric information, hence their improved efficiency is therefore quite crucial in ensuring the success of financial liberalization. Related to the above is the study by Al-Malkawi,et al (2012), whose study investigates the relationship between financial development and economic growth in United Arab Emirates using ARDL approach to cointegration and two indicators to examine this relation,the study found a significant negative relationship between financial development proxied by private sector credit and economic growth .

Similarly , another study by Samargandi,et al (2013 in an attempt to investigate the relationship between financial development and the economic growth in the context of an oil-rich economy "Saudi Arabia case study" using the Autoregressive Distributed Lag (ARDL) .The study found that the financial development has a positive impact on the growth of the non-oil sector in Saudi Arabia. The study showed a negative and insignificant impact on total GDP growth. This contracts with other studies like Were et al. (2012) who investigates the impact of access to bank credit on the economic performance of key economic sectors using sectoral panel data for Kenya. The study found a positive and significant impact of credit on sectoral gross domestic product measured as real value added

In Nigeria, Fapetu and Obalade (2015) studied the impact of sectoral allocation of deposit money bank loans and advances on economic growth using ordinary least square method. The results showed that only the credit allocated to government, personal and professional have significant positive contributions on economic growth. However, it was revealed that bank credits generally have no significant contribution to economic growth. In another study, also from Nigeria by Ezeaku (2014) on the impact of bank credit on economic growth using time series data ranging from 1987 to 2012 using OLS regression econometric technique. It was found out that bank credits impacted positively and significantly on economic growth over the period of the study. In a related study, Yakubu and Affoi (2013) analysed the impact of the commercial banks credit on economic growth in Nigeria using data from 1992 to 2012.

The Economic Model and Estimation Technique

In order to investigate the effect of private sector credit growth on output in Uganda, we model output/Gross domestic product as a function of five independent variables, starting with credit to the private sector as follows:

$$LGDP_t = \alpha_0 + \alpha_1 LPSC_t + \alpha_2 LINF_t + \alpha_3 LNEER_t + \alpha_4 LR_t + \alpha_5 LM2_t + \mu_t \qquad (1)$$

where GDP is the Real Gross Domestic Product; PSC is the credit to private sector and it includes only the loans, INF is inflation proxied by core consumer price index (CPI), NEER is the Nominal effective exchange rate, $M2$ is the log of Broad money supply and LR is the prime lending rate. The parameters to be estimated are α_0 (constant) and α_i (i=1,2,…,5), which are the slope coefficients. L represents the log. For simplicity, all the variables (with the exception of the lending rate) were expressed in logs so as to avoid outlier and make the interpretations in terms of elasticities and normalise them. μ_t is an error term that is identically and independently distributed with zero mean and constant variance σ^2 hence it is assumed to be a white noise error term.

Estimation Technique

In order to account for possible long run endogeneity in the included variables of equations (1), the parameters are estimated using the Fully Modified Ordinary Least Squares (FM-OLS) method suggested by Phillips and Hansen (1990). This method is appropriate for this study as it allows for the estimation of cointegrating relations directly by modifying the traditional OLS with non-parametric corrections that take account of serial correlation caused by unit roots and system endogeneity caused by cointegration. The meat of this paper relates to testing the statistical significance of β1, which is the coefficient of Private Sector Credit.

Diagnostic Tests

The Unit Root Test

The unit root test were carried out before running the model to avoid spurious regression, as Brooks (2008) insists .It is suggested that when dealing with time series data, a number of econometric issues can influence the estimation of parameters using Ordinary Least Squares (OLS) Regressing a time series variable on another time series variable using the OLS estimation, can obtain a very high R-squared although there is no meaningful relationship between the variables. This situation reflects the problem of spurious regression between

totally unrelated variables generated by a non-stationary process. Therefore, it is recommended that stationarity (unit root) test is carried to test for the order of integration.

On this background Dickey and Fuller (1981) developed an approach for testing the existence of unit root in the time series known as the Augmented Dickey-Fuller unit root test. The objective of applying the Augmented Dickey-Fuller unit root test (ADF) for individual series included in the model is provide evidence as to whether or not the variables used in the regression process are stationary and to indicate the order of integration.

The Augmented Dickey-Fuller (Dickey and Fuller, 1979) test used in this study is based on the following equations:

$$\Delta y_t = \alpha_0 + \beta_t + \alpha_1 y_{t-1} + \sum_{j=1}^{k} d_j \Delta y_{t-j} + \varepsilon_t \qquad (2)$$

Where: t denotes the time trend and acceptance of the null hypothesis of non-stationary ε is the white noise error term. Δ is the first difference operator, Y is the times series, α_0 is the intercept and k is the optimum number of lags of the dependent variable. The variable is said to be stationary if the value of the coefficient α_1 is less than the critical values from ADF table.

Determination of Optimal Lag Length

In this paper, we chose the optimal lag-length (the lag at which the residuals are free from serial correlation), in an attempt to reduce the number of lags as much as possible to get as simple a model as is possible, but at the same time we want enough lags to remove autocorrelation of the residuals. We choose the appropriate lag-length (ρ)using the information criteria: Akaike information criterion (AIC), Schwarz Bayesian information criterion (SBC) and Hannan Quinn (HQ) information criteria. These criteria have the same basic formulation, i.e. derive from the log likelihood ratio (LR) function but penalize for the loss of degrees of freedom due to extra ρ lags to different degrees, hence, in practice, need not to select the same preferred model and often they do not. A re-known researcher gives a very detailed exposition of these frameworks (Juselius, 2006).

Data

This study makes use of quarterly data spanning from 2000: Q1 to 2018: Q1 on the following macroeconomic variables: gross domestic product (GDP), PSC is the private sector credit. Inflation (INF), nominal effective exchange rate (NEER), and lending rate (LR). Data on the variables were obtained from the Central Bank of Uganda (BoU) Statistical Bulletin and various publications of the Uganda Bureau of Statistics (UBOS). GDP is used as a proxy to measure the overall economic activity/ Economic growth in Uganda, while PSC captures deposit money banks' credit to the private sector as a proportion of nominal GDP. M2, NEER and LR are proxies for, exchange rate and monetary policies, respectively. Fiscal policy was excluded due to data problems.

EMPIRICAL RESULTS

Table (1) reports the results of the unit root test (ADF) for the variables for their levels and at the first difference.

Table (1): The Results of the ADF Unit Root Test

	Levels				**First difference**				Order of Int
Variables	Intercept		Intercept & Trend		Intercept		Intercept & trend		
	Test Stat	5%	Test Stat	5%	Test Stat	5%	Test Stat	5%	
LGDP	-0.275	-2.904	-2.590	-3.477	-4.396.	-2.904	-4.319	-3.477	I (1)
LPSC	-1.087	-2.902	-2.363	-3.476	-8.230	-2.902	-8.217	-3.474	I (1)
LM2	-1.311	-2.902	-0.748	-3.473	-9.355	-2.903	-9.557	-3.474	I (1)
LR	-2.367	-2.902	-2.559	-3.473	-8.367	-2.902	-8.307	-3.474	I (1)
LINF	-0.441	-2.902	-2.032	-3.474	-4.135	-2.903	-4.079	-3.474	I (1)
LNEER	-0.048	-2.903	-2.025	-3.476	-6.464	-2.904	-6.460	-3.476	I (1)

We fail to reject the null of unit root if the test statistics of the ADF > 5% critical value.

As shown in table (3) the ADF results indicate that the null hypothesis of a unit root cannot be rejected for all the variables at 5% significant level and hence, the variables are non-stationary at their levels**.** The variables are stationary at first difference**.** This means that such series were differenced once to turn stationary.

Table 2: Optimal Lag length

Lag	LogL	LR	FPE	AIC	SBC	HQ
0	121.0919	NA	1.30e-09	-3.435580	-3.238145	-3.357455
1	549.1002	766.5820	1.08e-14	-15.13732	-13.75527*	-14.59044
2	605.3548	90.67904	6.05e-15	-15.74193	-13.17528	-14.72630
3	648.3379	61.58775	5.24e-15	-15.95039	-12.19912	-14.46600
4	716.7366	85.75360*	2.27e-15*	-16.91751*	-11.98163	-14.96437*

For 4 lags, FPE, AIC HQ choose 4 lags, and SBC choose only one lag. All these criteria have different penalties; However, SBC is preferred hence only one lag was used in this study.

Cointegration Analysis

Following the unit root test results shown in table (1) which indicate that the time series variables are integrated of order one I(1), the next step is to examine whether or not there is at

least one linear combination of the variables that is integrated of order zero, I(0), and hence, if there exists a stable and non-spurious cointegrated relationship in the long run between time series variables (Miguel, 2000). The Johansen approach can determine the number of cointegrated vectors for any given number of nonstationary variables of the same order. The Johansen's maximum likelihood test is based on maximal eigenvalue of stochastic matrix and the trace of the stochastic matrix. The technique was developed in Johansen (1988) and applied in Johansen and Juselius (1990). The test uses the Trace and Max Eigen test Statistic to identify the number of co integrating variables. The Johansen Co-integration test is conducted under the null hypothesis that there is no long run relationship among the variables. The trace and maximum eigen values are calculated as below:

$$J_{trace} = -T\sum_{i=r+1}\ln\left(1-\hat{\lambda}_i\right) \quad (3)$$

$$J_{\max} = -T\ln\left(1-\hat{\lambda}_{r+1}\right) \quad (4)$$

Where T is the sample size and $\hat{\lambda}_i$ is the estimated eigen values and ln is the natural log. The trace tests the null hypothesis of r cointegrating vectors against the alternative hypothesis of n cointegrating vectors while the maximum eigen value tests the null hypothesis of r cointegrating vectors against the alternative hypothesis of r+1 cointegrating vectors. In most cases the trace is preferred to the max eigen test. However, the trace test suffers from infinite sample bias. The sample bias adjustment is done using the correcting procedure suggested by Reimers (1992) and Harris and Sollis (2005) as specified in the equation below.

$$J_{trace\#} = -(T-nk)\sum_{i=r+1}^{n} ln(1-\lambda) \quad (5)$$

Where: n and k are the number of variables in the system (5 in this case) and lag-length used when testing for cointegration (1 lag in this case)

The cointegration tests were summarized in table 4a and 4b below

Table 4a. Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Trace #
None *	0.663831	160.4734	95.75366	150.29
At most 1 *	0.384949	85.25363	69.81889	77.25
At most 2 *	0.300717	51.71618	47.85613	44.68
At most 3	0.194066	27.03489	29.79707	20.72
At most 4	0.124698	12.14789	15.49471	11.79
At most 5	0.041964	2.958020	3.841466	2.87

Note: ***Trace stat # are personal computations by the authors***
*Trace test indicates 3 cointegrating eqn(s) at the 0.05 level and * denotes rejection of the hypothesis at the 0.05 level*

Table 4b: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.663831	75.21977	40.07757	0.0000
At most 1	0.384949	33.53745	33.87687	0.0548
At most 2	0.300717	24.68129	27.58434	0.1126
At most 3	0.194066	14.88700	21.13162	0.2969
At most 4	0.124698	9.189875	14.26460	0.2707
At most 5	0.041964	2.958020	3.841466	0.0854

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
** denotes rejection of the hypothesis at the 0.05 level*

From the table above, both the trace indicates three while the maximum eigen tests indicate that there is one cointegrating equations at 0.05%. Since the trace is more superior to the maximum eigen values., this relies on the trace statistics. The trace statistics however , suffers from sample bias and was adjusted / computed using the formula specified in equation (5) and values represented as trace stat # in the table (4).The trace # test statistics of the null hypothesis (r=0) of no cointegration vector against the alternative hypothesis (r=1) of cointegrating vector. The trace tests # statistic suggest that there are three cointegrating vectors.

Error Correction Model (ECM)

Having found that there is cointegration, the next step involves estimating a corresponding error correction model for economic growth. The error correction model captures both the long-run equilibrium to which output converges over time and the rate of adjustment following disequilibrium. The study found out that the coefficient of error correction was negative and statistically significant at 10 percent with a probability of 0.08. When the economic growth deviates from the equilibrium, its adjustment coefficient to bring it back to the equilibrium is 46.1 percent quarterly. In other words, 46.1 percentage is the percentage of disequilibrium in the economic growth that is adjusted quarterly.

Since the model variables are cointegrated, they can be presented by long-run FMOLS estimate of equation The Fully Modified Ordinary Least Square method (FMOLS) was originally proposed by Phillip and Hansen (1990). The method employs the semi-parametric correction to eliminate the long-run correlation between the cointegrating equation and the innovations. **Table (6)** reports the estimated results of the FMOLS approach.

Table 6: Fully modified ordinary least squares (FMOLS) Regression Results

Variable	Coefficient	Std error	t-value	Probability
LINF	0.202060	0.143124	1.411782	0.1629
LR	-0.007913	0.003267	-2.422257	0.0183
LM2	0.294655	0.058553	5.032254	0.0000
LNEER	0.014889	0.048434	0.307419	0.7595
LPSC	**-0.008215**	**0.033194**	**-0.247475**	**0.8053**
C	5.896778	0.226001	26.09180	0.0000
Durbin-Watson Stat	1.843370	Adjusted R-squared	0.969373	

According to the Fully Modified Ordinary Least Square (FMOLS) results, M2 has a positive and have significant impacts on Economic Growth. The prime lending rate has a significant negative effect on economic growth. Exchange rate, inflation and privates sector credit are insignificant. After exploring various econometric techniques, it was revealed that M2 has positive relationship with GDP. The results also showed that public sector credit has negative and non-significant impact on economic growth in Uganda. This can be attributed to the fact that chunk of the loans and advances to the public sector may have been diverted or misappropriated. Such facilities may have also been invested in socially desirable but economically unprofitable ventures that do not create value hence do not lead to increase in output. This very finding has raised doubt on the justification for public sector in developing countries. Thus, this is in line with the findings of Okafor et al. (2016) In Nigeria. Moreover, it can be seen that adjusted R^2 value is 0.97 indicating a good fit. The private sector credit exerts a significant positive impact on Economic growth.

CONCLUSION

There are very few studies in literature that sought to examine the effect public sector have on economic growth. The public sector in Uganda, which comprises the local, state and central government have often sought for credit from deposit money banks as a way of bridging financing gaps, and with the perceived aim of enhancing growth through investment, empowerment and developmental projects. The theoretical expectation however is that such activities would translate to rapid, or some measure of growth of the domestic economy. Most of the qualitative researches by public sector administrators and social scientists have only succeeded in giving us theoretical postulations and opinions on public sector financial habit without elucidating an empirical scientific approach in assessing the link between public sector credit and economic growth.

Disclaimer: The views expressed in this paper are those of the authors and do not necessarily reflect the Position and Policies of Islamic University in Uganda and Institute of development management (Botswana). All correspondences should be directed to the first author, Sawuya Nakijoba.

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EFFECT OF EXTERNAL DEBT ON ECONOMIC GROWTH IN NIGERIA

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ABSTRACT: *This study empirically examined the effect of external debt on economic growth in Nigeria under the period of 37 years (1981-2017). The study specifically examined the influence of external debt, external debt service payment and exchange rate on economic growth proxy as real gross domestic product. The study employed least square econometric technique to ascertain the relationship between external debt variables and economic growth in Nigeria. The study found that external debt and external debt service payment have negative effect on economic growth while exchange rate has positive effect on economic growth in Nigeria. The coefficient of multiple determinations (R^2) showed that approximately 77% of variations in economic growth are explained by the explanatory variables (EXTD, EXTDS and EXR) while the remaining 23% is accounted by factors not specified in the model. However, The Durbin Watson correlation test indicated that there is positive autocorrelation in the model which implied there is about 23% missing variables in the model. The conclusion that may be drawn from the study is that external debt has negative effect on economic growth in Nigeria. Hence, it is recommended that Debt Management Office should set mechanism in motion to ensure that loans were utilized for purposes for which they were acquired and channel towards productive uses and sourcing external debts should be considered as a means of long run development not just for solving short run problems.*

KEYWORD: External Debt, Domestic Debt, Economic Growth, Debt Management, Nigeria

INTRODUCTION

Human wants are insatiable and the means or resources available for the satisfaction of wants are limited in their supply (Olukunmi, 2007). In individual and national lives, the above assertion is true. To meet national wants amidst limited resources, nations might resort to borrowing. Debt is as a result of excessive borrowing. Oyejide, Soyede and Kayode (1985) explained that the aggregate of all claims against the government, held by the private sector of the economy or by foreigners, whether interest bearing or not less is referred to debt. Shortfall in domestic savings to finance productive activities compels nations to borrow (Ezeabasili, 2006).

Debt could be from within a nation's boarder (Internal) or from outside (External). According to World Bank (2004) external debt is referred to accumulated fund owed to non-residents repayable in terms of foreign currency, food or service. The effect of external debt on domestic investment and economic growth of a country has remained questionable for theoretical thinkers, stakeholders and academics alike. There has not been consensus on the impact of external debt on economic growth. External debt may be used to stimulate the

economy but whenever a nation accumulates substantial debt, a reasonable proportion of public expenditure and foreign exchange earnings will be absorbed by debt servicing and repayment with heavy opportunity costs (Albert, Brain & Palitha, 2005). Excessive external debt constitutes a major constraint to sustainable economic development and poverty alleviation (Maghyere & Hashemite, 2003; Sanusi, 2003; Berensmann, 2004; Siddique, Selvanathan & Selvanathan, 2015).

Those who argue that external debt has positive effect on the economy do that from the stand point that external debt will increase capital inflow and when used for productive ventures, accelerates the pace of economic growth. The capital inflow may be associated with managerial know-how, technology, technical expertise as well as access to foreign market. The above is in agreement with the views of the Keynesian theory of capital accumulation as a catalyst for economic growth. However, external debt may pose negative effect on investment through debt overhang and credit-rationing problem (Nwannebuike, Ugwu & Onwuka, 2016).

Debt overhang phenomenon is where substantial resources are used for debt servicing such that it stifles economic growth. It becomes a tax on domestic production such that the amount spent hampers meaningful economic growth activities as it reduces resources available to government to implement growth oriented economic policies (Nwannebuike, Ugwu & Onwuka, 2016).

Credit rationing effect results when a country has long accumulated debt acquired from different sources which has become a chronic problem to the country and cannot pay up as and when due. The authorities increase interest rates to narrow savings investment gap, thus affecting new investment, generating greater surplus for debt servicing and repayment. However, this may subsequently depress future growth prospects. The divergent views in literature on the nexus between external debt and economic growth become a motivating factor for the present study.

Objectives of the Study

The main objective of the study is to investigate the effect of external debt on economic growth in Nigeria. However, the specific objectives are to;

i. ascertain the impact of external debt on economic growth in Nigeria.

ii. examine the effect of external debt servicing on economic growth in Nigeria.

iii. establish the impact of exchange rate on economic growth in Nigeria.

Research Hypotheses

The study will be guided by the following null hypotheses:

H_{01}: External debt has no significant impact on Gross domestic product in Nigeria.

H_{02}: External debt servicing has no significant effect on Gross Domestic Product in Nigeria

H_{03}: Exchange rate has no significant impact on Gross Domestic Product in Nigeria

LITERATURE REVIEW

External Debt

The concept of borrowing dates back to the biblical era. When the children of Israel were leaving Egypt, they borrowed whatever they needed from the Egyptians while leaving the land of their captivity. In the modern era, borrowings by countries occur as a result of inability to generate enough domestic savings to carryout productive activities. Such external borrowings by countries are meant to supplement the domestic saving and allow such countries to carry out productive activities (Ezeabesili, 2011). A country can also borrow in the short term, from external sources, to finance current account deficits arising from external disturbances in order to shore up external reserves position and strengthen external liquidity position in the future. Foreign borrowing is seen to be desirable and necessary to accelerate economic growth, provided they are channeled to increase the productive capacity of the economy (Udoffia & Akpanah, 2016).

External debt is an essential source of finance mainly used to augments the local sources of funds for supporting development and other needs of a country. Usually external debt is incurred by a country which suffers from shortages of domestic savings and foreign exchange needed to achieve its developmental and other national objectives. However, if the external debt is not profitably and productively used, the effort of a debtor country in paying the debt becomes a critical concern as such may result to bad debt.

External debt therefore refers to the mobilization of fund and resources generated elsewhere outside the home country. Udoffia and Akpanah (2016) relate external debt to packages that consist of a combination of financial, technical vis-à-vis managerial requirements emanating from outside the country, aimed at supporting economic growth and development and are repayable at determined future date in foreign currency. Anyanwu (1993) in his own opinion sees external debt as the amount, at any given time, of disbursed and outstanding contractual liabilities of residents of a country to non-residents to repay principals with or without interest or to pay interest, with or without principal. Afolabi (1999) sees external debt as credits that are obtained in foreign exchange and are also to be serviced and repaid in international currency. Continuing, he opines that such loans may be bilateral that is negotiated between two countries mainly on mutual basis and in a friendly manner. It may also be multilateral where another party is acting "in-between" the borrowing and the lending parties or where the loan is syndicated in which case one party has to act for the membership of the financing syndicate.

From Anyanwu's perspective of external debt definition, the liabilities that dropped within his core definition include: currency and transferable deposits, other deposits, short-term bills and bonds, long-term loans (not classified elsewhere) and trade credit and advances. Continuing he sees foreign borrowing as a means of supplementing national resources (domestic) an immediate reduction in other uses of resources for either consumption or capital formation.

The World Bank (1998) described external debt as the amount of money at any given time disbursed and outstanding contractual liabilities of residents to pay interest, with or without principal. Many developing countries resort to external borrowing to bridge the domestic resource gap in order to accelerate economic development. It means that the processes are

utilized in a productive way that facilitates the external servicing and liquidation of the debt (Oke & Sulaiman, 2012).

Domestic Debt

Asogwa (2008) explained debt as a contractual obligation of owing or accumulated borrowing with a hope of paying back at a futuristic time. From the perspective of the government, debt may be contracted from within the country (domestic debt) using one instrument or the other and denominated in local currency, or from outside the country (external debt) and denominated in foreign currency. In Nigeria, domestic debts are contracted by the Federal Government, states and local governments. Practically, states and local governments can issue debt instruments but are limited in their capacity to do so. Domestic debt instruments in Nigeria mainly consist of treasury bills (TBs), treasury certificates (TCs) Federal Government development stocks (DS), bonds and means advances. The TBs, TCs and DS are marketable and negotiable while bonds and ways and means advances are not, but are rather held solely by the Central Bank of Nigeria (Adofu & Abula, 2010). These debt instruments are usually used to borrow locally in order to close the resource gap between savings and investment. Three reason for government domestic debt according to Alison (2003) are budget deficit financing, monetary policy implementation (i.e., trading of treasury bills in the open market), and development of the financial instruments to deepen the financial market.

Domestic Public Debt is mainly debt owed to holders of Government securities such as Treasury Bills and Treasury Bonds. Governments usually borrow by issuing securities, government bonds and bills. Governments borrow for two reasons namely: when the projected revenue targets fall short of the projected expenditure and to pay off maturing loans (Ponzi games) which is typical with domestic debt (Babu, Kiprop, Kalio & Gisore, 2015). Fry (1997) indicates that reliance on external resources to complement capital formation in the domestic economy is a principal factor causing increasing level of debt. The greater the interest payment and the heavier the deficit on the current account, the heavier the debt burden.

Debt sourced finance represents funds with fixed contractual obligations which will require pledging future resources of the nation as collateral. However, in order to cope adequately in the long run, with servicing requirement, a nation's debt service capacity must increase at a rate higher than that of its financial risk exposure. The non-debt resources on the other hand represent funds flow without fixed or compulsory servicing obligations on the government. The magnitude and regularity of such resources however, depend on perspective of foreign investors on the investment environment in the recipient country.

Essentially, the domestic debts entail debt instruments issued by the Federal, states and local governments and denominated in local currency (Titus, Chidi, Tochukwu & Babatunde, 2016) but excludes contractor debts and supplier credit owed by the governments, as well as contingent liabilities and inter-agency debts.

Economic Growth

Economic growth occurs whenever people take resources and rearrange them in ways that are more valuable. Economic growth refers to the quantity of goods and services produced; it says nothing about the way in which they are produced. Economic growth can be measured in

nominal terms, which include inflation, or in real terms, which are adjusted for inflation i.e. by the percent rate of increase in the gross domestic product (GDP). Economic growth measures growth in monetary terms and looks at no other aspects of development (Ayres & Warr, 2010).

Economic growth may be positive or negative. Negative growth can be used to describe a situation where the economy is shrinking. Negative growth is associated with economic recession and economic depression. Gross national product (GNP) is sometimes used as an alternative measure to gross domestic product. In order to compare multiple countries, the statistics may be quoted in a single currency, based on either prevailing exchange rates or purchasing power parity. Then, in order to compare countries of different population sizes, the per capita figure is quoted. To compensate for changes in the value of money (inflation or deflation) the GDP or GNP is usually given in "real" or inflation adjusted, terms rather than the actual money figure compiled in a given year, which is called the nominal or current figure (Ayres & Warr, 2010).

A fundamental requisite to economic development in a country is economic growth. This informs why in Nigeria growth continuously dominates the main policy thrust of government's development objectives. Essentially, economic growth is associated with policies aimed at transforming and restructuring the real economic sectors. Nevertheless, the lack of sufficient domestic resources, savings and investment to support and sustained the sectors is a major impediment to economic development in the country because of the gap between savings and investment (Imimole & Imoughele 2012). Ullah and Rauf (2013) noted that whenever there is increase in real GDP of a country it will boosts up the overall output and we called it economic growth. The economic growth is helpful to increase the incomes of the society, help the nation to bring the unemployment at low level and also helpful in the deliveries of public services.

Haller (2012) opined that economic growth is a complex, long-run phenomenon, subjected to constraints like: excessive increases of population, limited resources, inadequate infrastructure, inefficient utilization of resources, excessive governmental intervention, institutional and cultural models that make the increase difficult, etc. Economic growth is obtained by an efficient use of the available resources and by increasing the capacity of production of a country. It facilitates the redistribution of incomes between population and society. The cumulative effects, the small differences of the increase rates, become big for periods of one decade or more. It is easier to redistribute the income in a dynamic, growing society, than in a static one.

Review of Empirical Literature

In Greece, Panagiotis (2018) investigates the nexus between economic growth and several factors (investment, private and government consumption, trade openness, population growth and government debt), where imbalances persist several years after the financial crisis. The results reveal a long-run relationship between variables. Investment as private and government consumption and trade openness have positive effect on growth. On the other hand, there is a negative long-run effect of government debt and population growth on growth. Furthermore, the study addresses the issue of break effects between government debt and economic growth. The results indicate that the nexus between debt and growth depends on the debt breaks. Specifically, at debt levels before 2000, increases in the government debt-

to-GDP ratio are associated with insignificant effects on economic growth. However, as government debt rises after 2000, the effect on economic growth diminishes rapidly and the growth impacts become negative.

Adamu, Salihu, Musa, Abdullahi and Bello (2018) enhance the existing literature on the debt growth-nexus by analyzing the relationship between debt variables and economic growth within Solow (1956) growth framework. The study employs econometric technique of Autoregressive Distributive Lag (ARDL) model and applied on time-series data for Nigeria spanning between 1981 and 2016. The finding of the study explored that external debt and economic growth are negatively related both in the short and long runs. The evidence suggests that increase in external debt will lead to decline in economic growth. Based on the findings, the study suggests that debt service obligation should not be allowed to rise more than foreign exchange earnings and that the loan contracted should be invested in profitable and productive ventures, which will generate a reasonable amount of money for debt repayment. Paul (2017) analyses the impact of external debt on economic growth in Nigeria. Data are collected from secondary sources. The variables on which data are collected include; Gross Domestic Product, external debt services, external debt stock, external reserve, and exchange rate. The scope of the study covers the period from 1985 to 2015. Ordinary least square regression, ADF unit root test, Johansen cointegration and error correction test were the basis for analysis. Findings reveal that debt service payment has insignificant negative effect on Nigeria's economic growth while external debt stock has significant positive effect on Nigeria's growth index. The control variables: external reserve and exchange rate have significant positive effect on growth. The ADF unit root test shows that all the variables are not stationary at levels but at first difference. Johansen cointegration test shows long-run relationship between external debt and growth index (GDP). It also shows that the variables have at least one common stochastic trend driving the relationship between them. The causality test indicates unidirectional causality between external debt and GDP. From the findings, the study recommends that government should apply external loans to infrastructural development; improve business environment through legislation; initiate proper debt management policies and substitute external borrowing for human capital development.

Aguwamba and Adeghe (2017) examines the external debt crisis and Nigeria's economic growth. It covers a period of 30 years (1979-2008) with GDP, external debt and external debt service payments as the variables. The GDP is the dependent variable, while external debt and external debt service payments are the independent variables. Cointegration econometric model is used for the estimation and the Unit root test is conducted in order to ascertain the stationarity of the variables. The results indicate that the GDP has positive relationship with the external debt and negative relationship with the external debt service payments.

Amassoma and Adeniran (2017) explore the nexus between external debt and economic growth in Nigeria between the periods 1980 to 2014. The study adopts OLS regression method to ascertain the existing relationship. The results show that external debt exerts a negative and significant effect on private investment in Nigeria, while domestic debt had a positive and significant influence on private investment in Nigeria during the study periods, indicating that external debt impedes private investment in Nigeria. The study concludes that external debt is inversely related to private investment, meaning that an increase in external debt goes a long way in reducing private investment which slows down economic growth in

the country. It is hence recommended that there is the need for the government to focus more on domestic investment and lessen the concentration on private investment.

Ukpe, Umeh, Ater and Asogwa (2017) address the impact of private investment and external debt on economic growth in Nigeria for the period of 1980 to 2016. Secondary data were collected and analysed using fully modified ordinary least square. The result showed that the coefficient of determination (R2) was 0.65 indicating that 65% of the variation of agricultural output was explained by public external debt, foreign direct investment, domestic private investment and labour. The result also showed that the coefficients of public external debt (-0.315) and domestic private investment (-0.488) were significant and negative indicating that unit increase in public external debt and domestic private investment decrease agricultural growth by 0.315 metric tons and 0.488 metric tons respectively. In contrast, the coefficient of labour (1.487) was positive and significant indicating that unit increase in labour will increase agricultural output by 1.487 metric tons. It was recommended that specialized development agencies should be set up with the aim of implementing and evaluating government policies on foreign external debt and economic growth. Ibrahim (2016) discusses the effects of external debt on public capital investment in Nigeria from 1970 to 2013 using autoregressive distributed lag (ARDL) bound testing approach. The findings that study reveals are that external debt and debt service exert negative impact on public capital investment, but the current real GDP is positive. The evidence suggests that external debt does not influence public investment over the period under study. At longer horizon, it is confirmed that the nature of poor domestic savings and investment causes higher debt service payments and crowd out available resources for investment in economic and social sectors. It is proffered that policy makers should adhere strictly to the appropriate use of debt through efficient investment, so that the debt service payments do not exceed the country's payment capacity. Okwu, Obiwuru, Obiakor and Oluwalaiye (2016) employ relevant econometric analysis to examine the effects of domestic debt on economic growth in Nigeria during the 1980-2015 periods. Variables of analytic interest were real gross domestic product (RGDP) as economic growth proxy, and domestic debt stock (DDS) and domestic debt servicing expenditure (DDSE) as determinant variables; with government expenditure (GEXP) and banks' lending rates (BLR) exerting moderating influence. On individual merits of the explanatory variables, the results showed evidence of significant short and long-run positive effect for DDS; negative effect for DDSE but insignificant negative effect for BLR. The variables jointly exerted significant effect and exhibited considerably high power in explaining variations in growth of the economy during the period. The conclusion was that domestic debt had short and long-run growth potentials. Thus, adequate deployment of domestic debt to key sectors of the economy was recommended for sustainable short run growth that might possible translated to long run growth.

Akinwunmi and Adekoya (2016) examine external reserves management and its effects on Nigerian economic growth from 1985 to 2013. Secondary data were sourced from Central Bank of Nigeria statistical bulletin, Nigeria Bureau of Statistics of various editions and other related Journals. Augmented Dickey Fuller unit root test, ordinary least square and Johansen cointegration test were conducted. The study reveals that there is a significant relationship between external reserves and the explanatory variables. Unit root test showed that at first differential level, EXR, MPR. IFR, FDI are stationary; and co-integration test shows that there is a proof of co-integration between the variables. The results from regression analysis further shows that explanatory variables explain and account for 90% variations in external

reserves which is an evidence of good fit of the model. In addition, the multiple regression results show that GDP, MPR and FDI are highly statistically significant while IFR and EXR are statistically insignificant. This implies that FDI, MPR and GDP contributes immensely to the external reserves position in Nigeria. It also implies that a good performance of the economy is a positive signal for inflow of foreign direct investment which impact the reserves position of the economy. Sulaiman and Azeez (2012) employ ordinary least square, ADF unit root test, Johansen co-integration test and error correction method (ECM) techniques to study effect of external debt on the economic growth of Nigeria. The co-integration test shows that long-run equilibrium relationship exist among the variables, the findings from the error correction method show that external debt has contributed positively to the Nigerian economy. The study recommends that government should ensure economic and political stability and external debt are acquired largely for economic reasons rather than social or political reasons.

METHODOLOGY

Model Specification

Special reference is made to the work done by Amassoma (2011), which is modified for the purpose of the study.

The present study adapts the model proposed by Amassoma (2011) by dropping internal debt, this is because internal debt measure domestic debt and this study is purely external debt and economic growth which silence domestic debt. The study therefore includes exchange rate and external debt servicing variables into the model. The justification for the inclusion of exchange rate is to account for the rate at which the debt is being serviced over a year. Based on this, the proposed model for the study will therefore be stated as:

$$RGDP = f\ (EXTD, EXTDS, EXR) \quad \text{3.1}$$

Where:

RGDP = Real gross domestic product expressed in constant term; *EXTD* = External debt; *EXTDS* = External debt servicing; *EXR* = Exchange rate; *et* = error term

Estimation Technique

For easy analysis, this study adopts the ordinary least square method of multiple regression analysis. This is based on the various desirable of the ordinary least square which many other estimation techniques do not possess. These include the properties of Best, Linearity, Unbiasedness and Efficiency (BLUE). Some of these desirable properties are summarized in the BLUE properties of OLS.

RESULT AND DISCUSSION

Summary of OLS Result

Variables	Co-efficient	Standard error	t-statistics	Probability
C	4.568415	0.160843	28.40301	0.0000
EXTD	-0.213615	0.069048	-3.093745	0.0043
EXTS	-0.053322	0.019121	-2.788673	0.0092
EXR	0.446532	0.061396	7.272997	0.0000

R^2 = 0.766256 Adj R^2= 0.742076 ***D.W.*** = 0.347424
N = 37 ***F-stat=*** 31.68917 Prob= 0.000000
Source: Eview 9.0

The relationship between the dependent variable (RGDP) and the independent variables (EXTD, EXTDS and EXR) in the table above, this can be expressed mathematically as:

RGDP = 4.568415 - 0.213615EXTD - 0.053322EXTDS + 0.446532EXR + μ …… 4.1

DISCUSSION OF FINDINGS

Empirically, the study reviews the effects of external debt on economic growth in Nigeria for the period of 37 years which spanned from 1981 to 2017. Using least square multiple regression, the study found that the variables in the study have significant effects on economic growth. Specifically, exchange rate has positive effect on economic growth which implies that exchange rate has a power influencer on economic growth by 44.6% changes. Conversely, external debt and external debt service payment have negative effects on economic growth in the study period which implied that an attempt to increase external debt and its service payment in the country will simultaneously result to 21.3% and 5.33% changes respectively. The coefficient of multiple determinations (R^2) showed that approximately 77% of variations in economic growth are explained by the explanatory variables (EXTD, EXTDS and EXR) while the remaining 23% is accounted for by factors not specified in the model. However, The Durbin Watson correlation test indicated that there is positive autocorrelation in the model which implied there is about 23% missing variables in the model.

Implication of Findings

The empirical evidence shows that there is a negative relationship between economic growth and the present level of external debt in Nigeria. This is evident by negative effects of external debt and external debt service payment on economic growth in the analysis. The result indicates that within the study period, an attempt to increase external debt will reduce economic development in the short run because capital is not use for investment. From this result it becomes clear that external debt is unfriendly to economic development. The implication that the result poses is that accumulation of the external debt puts pressure on economic growth as external debt repayment and servicing reduces the foreign exchange earnings of the country. The fiscal burden of debt servicing has been observed as extremely hostile to economic development in Nigeria and has been further observed as an important reason for the failure of structural adjustment programmes to restore economic growth in

Nigeria (Isa, 2004; Emori, 2015). This therefore implies that an effort to reduce the mounting huge external debt, Nigerian government frequently diverts resources to take care of pressuring debt service obligations instead of allocating the resources to the development of infrastructure that would have improve the well being of the citizenry.

Conclusively, the trend of debt in Nigeria within the last 3 years is alarming as such external debt and its service payment have negative effect on economic growth. The significant effect implies that if the foreign borrowing were used for its major purpose without siphoning or diversion to unproductive sector it will enhance economic growth. Therefore, Nigeria government should intensify measure to reduce the debt collection of the country and simultaneously increase the development of real sector.

CONCLUSION AND RECOMMENDATIONS

This study examines the effect of external debt on economic growth in Nigeria under the period of 37 years (1981-2017). The study employed least square econometric technique to ascertain the relationship between external debt variables and economic growth in Nigeria under the study period. External debts are necessary to meet shortfall internal resources, and stimulate the economy. However, it must be properly utilized to avoid serious consequences. Borrowing is not the most important issue but the use to which the fund is deployed. This should be the most important thing agitating the mind of any good accountant and Economist whenever external debt is contemplated. It should be approached with caution, ensuring optimal utilization and higher return than the interest (cost of fund) (Nwannebuike, Ugwu & Onuka, 2016). External debt is a proportion of the nation's national debt sourced from international individuals, agencies and/or government. It has been observed and confirmed by this study that external debt contributed in negative direction toward economic growth in Nigeria under the study period. It is a clear fact from observable reality that ineffective utilization of debt will make repayment a difficult task, the interest will keep accruing (a time almost to the tune of the capital), then repayment becomes a questionable problem and such debt will become a bad debt (Olasode & Babatunde, 2016).

To sum, exchange rate has significant positive effect on the Nigerian economy while external debt stock and debt service payment have significant negative effect on the Nigerian economy. The conclusion that can be drawn from this study is that external debt have significant negative effect on economic growth in Nigeria. The result of the study is in connection and in consistence with the study of Adamu, Salihu, Musa, Abdullahi and Bello (2018) and Nwannebuike, Ike and Onuka (2016) who concluded that exchange rate had significant positive impact on the Nigerian economy while external debt stock and debt service payment had significant negative impact on the same economy.

Arising from the evidences offered by the empirical results, it is pertinent to offer some policy options that could strengthen the connection between external debt and economic growth in Nigeria.

i. Debt Management Office should set mechanism in motion to ensure that loans were utilized for purposes for which they were acquired and channel towards productive uses and sourcing external debts should be considered as a means of long run development not just for solving short run problems.

ii. Debt Management Office should set maximum limit of loans state and federal governments could be allowed to acquire based on certain stipulated criteria.

iii. Nigeria should use her accumulated external foreign reserves instead of incurring more external debts, as this will ensure increase in real economic growth and reduce capital flights through repayments of debts to external sources.

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EFFECT OF FOREIGN EXCHANGE MANAGEMENT ON ECONOMIC GROWTH IN NIGERIA (1987-2017)

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ABSTRACT: *The study investigated the effect of foreign exchange management on economic growth in Nigeria for the period of 1987 to 2017. Real exchange rate, inflation, degree of openness and foreign direct investment were used to determine the influence of foreign exchange management on economic growth proxied as real gross domestic product in Nigeria. The study employed unit root test was used to test the stationarity of the variables, the Auto Regressive Distribution Lag (ARDL) test to test for the presence of long run relationship among the variables, Error Correction model to show the rate at which short-run inconsistencies are being corrected and incorporated into the long-run equilibrium relationship. The result of the study found that real exchange rate has positive and significant effect on economic growth; inflation rate revealed a negative and insignificant effect on economic growth; degree of openness indicated positive and insignificant effect on economic growth and lastly foreign direct investment displayed positive and statistically insignificant effect on economic growth in Nigeria. It was concluded that foreign exchange management has positive and insignificant effect on economic growth under study review in Nigeria. The study recommended that investors should consider fluctuations in other macroeconomic variables rather than fluctuation in the exchange rate market to guide their decisions in order to ascertain where to direct investments for profit maximization. The study further suggested that government and the monetary authorities should design policies and programs that will curtail the rising inflation rate thereby encouraging investors to invest in Nigeria.*

KEYWORD: Foreign Exchange Management, Economic Growth, Real GDP, Nigeria

INTRODUCTION

The act of transacting local currencies for international currencies at varying exchange rates is referred to foreign exchange. Foreign exchange represents a component that is widely used on regular daily basis for settlement of foreign transactions and bills. The price of a home currency to another is called exchange rate. It represents the number of units of a given currency of a particular country that can be exchanged for unit of another currency (Oleka, Sabina & Mgbodile, 2014).

The concerns for achievement of a realistic exchange rate for the naira have continued to generate a great instigation to monetary policy formulators, owing to its unarguable significance in bringing about economic growth. This therefore explains in part why it is quintessential for any growth-conscious country to manage its foreign exchange. Oloyede (2002) opined that exchange rate relate to the price of one currency in terms of another, which is an important decision-making variable in every nation, thus making it a critical issue for any country desirous of development.

Foreign exchange management is described as a technique that involves the generation and disbursement of foreign exchange resources so as to reduce destabilizing short-term capital flows. The CBN monitors the use of scarce foreign exchange resources in order to ensure that foreign change allocation and utilization are in consonance with economic priorities and the foreign exchange budget (Fapetu & Oloyede, 2014).

No country is self sufficient, therefore developing countries of the world need to import raw materials and spare parts for the purpose of economic development, foreign exchange reserves for build-up is required to ensure that panic measures are not resorted to when foreign exchange receipts are dwindling (Fapetu & Oloyede, 2014). When there is disequilibrium in the foreign exchange market caused by inadequate supply of foreign exchange reserve, pressure may be exerted on foreign exchange reserves. If the reserves are not adequate, this may deteriorate into balance of payments problems. This therefore signifies the need to manage a nation's foreign exchange resources so as to reduce the negative effects of foreign exchange volatility (Obaseki, 1991).

In the process of managing the nation's foreign exchange, exchange rate management varies from time to time according to market dynamism. Between 1960 and 1986, the fixed exchange rate system was operated. The inability of the system to achieve the major objectives of exchange rate policy led to the reversal of the policy in September 1986 with the floatation of the Naira. The flexible exchange rate system was introduced between 1986-1993, a temporary halt to deregulation in 1994 when the official exchange rate was pegged and the reversal of policy in 1995 with the guided deregulation of the Foreign exchange market, through exchange rate liberalization and the institution of a dual exchange rate mechanism. The policy thrust of 1995 was retained in 1996 while the dual exchange rate system crisis was retained in 1997 and 1998. However, all official transactions, except those approved by the Head of State were undertaken in the Autonomous Foreign Exchange Market (AFEM). Thus, transactions at the pegged official exchange rate were relatively slimmer. Owing to market imperfections and to sustained instability in the exchange rate of the Naira, the AFEM was replaced with an Inter-bank Foreign Exchange Market (IFEM) in October 1999 after an initial period of co-existence (Onyeizugbe & Umeagugesi, 2014).

In the IFEM, a two-way quote system is expected to prevail while the market as conducted daily in dispensation, oil firms were allowed to keep their foreign exchange in banks of their choice against the CBN. The CBN has continued to fine tune the IFEM to make it more effective and efficient. Early in 2002, Thomas look was granted permission to transact foreign exchange business on travellers cheques in Nigeria. This is intended to deepen the foreign exchange market and reduce the undesirable impact of the parallel market (Fapetu & Oloyede, 2014).

The need for foreign exchange arises only within the framework of countries engaged in international trade, in contrast to a closed economy, whose scope does not transcend its intra-country trade transactions. This therefore makes this economic issue pertinent in a bid to ensuring a guaranteed growth for the country, owing to the fact that majority of the country's raw materials for manufacturing purpose are imported coupled with the fact that Nigeria is the 6th largest oil producing country.

An examination of literature on foreign exchange management indicates that most studies are on exchange rate volatility and its impact on macro-economic indices. Where the study is not

on volatility of exchange rate, it involves uncertainty in foreign exchange market on the domestic output of nations macro-economic and institutional factors impact on stock market indices, development of government bond markets, on alternative wage-setting regimes, exchange rate and inflation, exchange rate volatility, stock prices and lending habits of banks. This study thereby observed that amidst numbers of existing literature put together by prominent scholars (Ndu-Okereke & Nwachukwu, 2017; Amassoma & Odeniyi, 2016; Obi, 2017; Adegbite & Owolabi, 2017; Obi, Oniore & Nnadi, 2016; Okorontah & Odoemena, 2016; Lawal, 2016; Onyeizugbe & Umeagugesi, 2014; Oleka, Sabina & Mgbodile, 2014; Fapetu & Oloyede, 2014; Adegbite & Owolabi, 2012) to mention but a few on exchange rate in Nigeria, very few studies have investigated the effect of foreign exchange management on economic growth in Nigeria. This study is designed to ascertain whether the exchange rate promote export performance, whether exchange rate has any bearing on Nigerians economic growth and development, to know the contributions of the deregulation in the Nigerian economy, it also seeks to show whether the achievement will continue to increase the development of the economy or not.

The main thrust of the study is to examine the effect of foreign exchange management on economic growth in Nigeria between 1987-2017. The specific objectives of the study are to; investigate the effect of exchange rate on economic growth in Nigeria; ascertain the effect of inflation rate on economic growth in Nigeria; evaluate the impact of degree of openness on economic growth and establish the extent to which foreign direct investment influence economic growth in Nigeria.

LITERATURE REVIEW

Foreign Exchange Management

Foreign Exchange refers to the financial transaction where currency value of one country is traded into another country's currency. The whole process gets done by a network of various financial institutions like bank, investors and government (Owolabi & Adegbite, 2012).

Foreign exchange management is described as a technique that involves the generation and disbursement of foreign exchange resources so as to reduce destabilizing short-term capital flows. Consequently, in order to ensure that foreign change allocation and utilization are in agreement with economic priorities and the foreign exchange budget, the CBN monitors the use of scarce foreign exchange resources. For most developing countries that need to import raw materials and spare parts for the purpose of economic development, foreign exchange reserves, for build-up is required to ensure that panic measures are not resorted to when foreign exchange receipts are dwindling. When there is disequilibrium in the foreign exchange market caused by inadequate supply of foreign exchange reserve, pressure may be exerted on foreign exchange reserves. If the reserves are not adequate, this may deteriorate into balance of payments problems. There is therefore, the need to manage a nation's foreign exchange resources so as to reduce the adverse effects of foreign exchange volatility (Obaseki, 1991).

According to Obadan (2006), exchange rate reform under SAP was aimed at setting an appropriate value for the naira through the market system in order to encouraged non-oil exports, increase capital inflow, and curtail demand for import. It was expected that the

exchange rate reforms, with the supportive fixed and monetary policy measures, would help to diversify and export base of the economy. Obadan argues further that the depreciation of the Naira fuelled inflation, raised the cost of domestic production and consequently, raised the prices of finished products. The increase in the prices of goods resulted in low aggregated demand, huge prices of Nigerian exports. One factor that reinforced this position was that a substantial part of the high prices was imported from abroad, since many of our raw materials are imported.

On the other hand, the emergency of synthetic substitutes for products like cotton, rubber, palm oil, and hides and skins worsened the demand for these commodities in the world market. Following the adoption of floating exchange rates in the developing countries in 1973, the issues of whether exchange rate changes and uncertainties have an independent unfavourable effect on trade has generated an intense in studies. The introductions of Structural Adjustment Programmes (SAP) in many of the developing countries and the attendant liberalization of exchange rate have further brought the discussion of this issue into sharp focus.

According to Stanley (2007), the management of exchange, especially the floating exchange rate is a positive tool in the hands of government policy makers because it can be used to achieve internal and external balance of payment equilibrium, thus aiding more flexibility in the use of monetary and fiscal policy. On whether exchange rate has any impact on the economic development of a country, the author believes that in an increasingly and trade, foreign exchange means the flow of scarce foreign reserves and goods across borders. It will therefore, inevitably has an impact on the development of a country. On whether those impacts on the development of a country will be positive or negative depends on how the foreign exchange is managed and other peculiar economic condition of that country.

Stanley (2007) further asserts that the globalization of international trade have tied world commodity and capital markets even more tightly together and this have acted to reduce the effect of national economic policy on the management of exchange rate stability. He concluded that given these conditions, the use of the floating exchange rate as opposed to the fixed exchange rate is the best option in cushioning the effect of fluctuating exchange rate on the economic development of a country.

According to Lipson (2009), the exchange rate of a country's currency fluctuates because of changes in demand or supply in the foreign exchange market. He asserted that these changes in the demand and supply are in turn caused by differing rates of inflation, capital movement between countries, and structural changes in the economy, Lipsey also states that the continuing downward depreciation of the exchange rate of a country's currency will in the long run have a negative impact on domestic economic development because depreciation leads to a general price rise of both imported and locally produced goods and services.

In Nigeria, Ajayi (2008) and Osagie (2005) argue that exchange rate devaluation have no significant effect on the external trade balance because of low price elasticity generally associated with the excess import and export demand functions. There study agreed with Ojo (2008) who implies that exchange rate changes need not play any significant role in the explanation of Nigeria's import export balance. Obaseki (2001) opines that naira exchange rate fluctuation or depreciation vis-à-vis other currencies is not as problematic as the existence of many different exchange rates such as the official rate, the inter-bank rate and

the autonomous or the black market operators and other agents would try to purchase and hoard foreign exchange from one market with the hope of selling it at higher return in another market later.

This practice, in his view, destabilizes the foreign exchange market and its responsible for the foreign exchange crisis in Nigeria faced in the 1980's. He advocated for the promotion of exchange rate convergence, i.e. the attainment of a single market determined exchange rate for the whole economy as this promote general price stability, sustained economic growth and development (Bateman, 2003).

Taiwo (2000), however, investigated the determination of non-oil exports supply for Nigeria. He disaggregated non-oil exports into two categories – agriculture and manufacture. The supply function of the two categories has three arguments; relative prices, capacity output and oil revenue. While the first two variables were positively related to export supply, the third variables (oil revenue) had an inverse relationship with it. The last result confirms the existence of the Dutch disease, since the oil boom in the Nigerian Economy, a phenomenon which has been widely documented in literature.

Empirical Review

Fapetu (2013) examined the relationship between foreign exchange and the Nigerian economic growth using the annual data for the period of 1960 to 2012. Employing ordinary least square technique, the result shows that exchange rate accounted for 99% variation in economic growth.

Oleka, Sabina and Mgbodile (2014) establish the impact of foreign exchange rate on the growth of Nigerian economy for the periods of 2000 to 2014. Gross domestic product is used as dependent variable indicating economic growth of Nigeria while independent variables proxied as money supply, inflation rate, employment rate and foreign exchange rates were used as foreign exchange indicators. Multiple regression models are used and the result reveals that there is variation on money supply and naira exchange rate; hence the monetary policy instruments were not efficacious in the attainment of price and exchange rate stability in Nigeria. Again, growths in money supply impact negatively on the economy as they breed inflation and there are significant relationships among M_1, real exchange rate, unemployment rate and inflation rate. The study therefore recommends that monetary authorities should endeavour to come up with macroeconomic policy that is capable of putting the economy back on a path of sustainable and non-inflationary position.

Fapetu and Oloyede (2014) investigate foreign exchange management and the Nigeria economic growth from 1970 to 2012. The ordinary least square, Johansen cointegration and the error correction model (ECM) framework were employed. The result shows that export and foreign direct investment are statistically significant in determining economic growth. However, exchange rate, import and inflation are found to be statistically non significant. The study recommends that government should increase the consumption of locally made goods in order to increase foreign exchange earnings.

Obi, Oniore and Nnadi (2016) examine the relationship between exchange rate regimes and output growth in Nigeria in different periods from 1970 to 2014. The study employs the Generalized Method of Moments (GMM) to estimate economic growth equation as a result of endogennity problem. The findings suggested that fixed exchange rates constrain the

performance of the Nigerian economy as real exchange rate depicts inverse relationship with economic growth during the whole period and period of fixed exchange regime.

Amassoma and Odeniyi (2016) centered their study on the nexus between exchange rate variation and economic growth in Nigeria using an annual data of forty-three (43) years covering the period (1970–2013). The study made use of multiple regression model, Augmented Dickey Fuller (ADF) test, Johansen cointegration test and the Error correction model (ECM) test. The study establishes that there exists a positive but insignificant impact of exchange rate fluctuation on Nigerian economic growth in both the long run and short run. The study recommends that there is need to encourage domestic production of goods and services for Naira exchange rate appreciation.

Okorontah and Odoemena (2016) investigate the effects of exchange rate fluctuation on economic growth of Nigeria. Using annual data for the period 1986-2012, the study employed the ordinary least square (OLS) technique, the Johansson co-integration test and the error correction mechanism (ECM). The result suggested that there is no strong relationship between exchange rate and economic growth in Nigeria. It is therefore suggested that Nigeria improve its competitive capacity in the international market through export diversification.

Lawal (2016) analyzes the effect of exchange rate fluctuations on manufacturing sector output in Nigeria from 1986 to 2014. Data on manufacturing output, Consumer Price Index (CPI), Government Capital Expenditure (GCE) and Real Effective Exchange Rate (EXC) were sourced from Central Bank of Nigeria and analyzed through Autoregressive Distribution Lag (ARDL). The study discovers that exchange rate fluctuations have long run and short run relationship on manufacturing sector output. The result shows that exchange rate has a positive effect on manufacturing sector output but not significant. The study recommends that government should strategize to encourage exports and discourage imports in order to achieve a favourable balance of payment.

Hock-Tsen and Hock-Ann (2016) evaluate the effect of exchange rate volatility on disaggregated bilateral exports of manufactured goods to China. Exchange rate volatility is estimated by the threshold generalized autoregressive conditional heteroscedasticity (TGARCH) model. The Johansen cointegration method and the dynamic ordinary least squares (DOLS) estimator were used in the estimation. The result reveals evidence of significant exchange rate volatility effect on real exports.

Sani, Hassan and Azam (2016) review empirically the effect of exchange rate volatility on the output level of the five English speaking countries in ECOWAS, namely Nigeria, Ghana, Gambia, the Sierra Leones and Liberia, over the period 1991 to 2014. Co-integration test and error correction modelling were used as estimation techniques. Estimates of co-integration relations were obtained and the short-run and long-run dynamic relationships between the variables were obtained for each country utilizing the tests. In general, exchange rate volatility has a significant impact on outputs at least for all the countries considered in the study, with all except Liberia having negative impact.

Drama (2016) provides an empirical evidence on the nexus between foreign exchange reserves and inflation for four West African countries namely Cote d'Ivoire, Senegal, Ghana and Nigeria. A comparison of empirical evidence is obtained from the Autoregressive

distributive lag model (ARDL) using annual data running the period of 1972 to 2014. The empirical result shows that the nexus between the change in foreign exchange reserves and inflation rate is positive for the countries in long run but the overall short run estimation of the model is insignificant at the conventional level. This means that rise in foreign exchange reserves leads to increase the rate of inflation. The study suggested that governments should pay more attention to foreign exchange system management by enlarging open market operations.

Obi (2017) investigates the influence of foreign exchange volatility on foreign direct investment in Nigeria from 1999- to 2016. Ordinary least square was used to estimate the partial coefficients of the independent variables. The finding from the study reveals that fluctuations in exchange rate have a positive and significant influence on foreign private investment in Nigeria which supports the argument that FDI investment in Nigeria is determined by exchange rate as well as technology, entrepreneurial skills, source of capital an overall.

Ndu-Okereke and Nwachukwu (2017) studied the effect of exchange rate fluctuations on the Nigerian economy. Employing the use of vector auto regression (VARs) models on the time series data, the result revealed that supply of foreign exchange has a positive and significant relationship with output level of Gross Domestic Product while the demand for foreign exchange has a negative relationship with gross demand product. The study recommended an aggressive expansion of the Nigerian economy especially investment in the agricultural and manufacturing sectors of the Nigerian economy.

Adegbite and Owolabi (2017) examined the effects of foreign exchange rate and foreign trade on economic growth in Nigeria. Secondary data were obtained from central bank of Nigeria statistical bulletin covering the period of 1970 to 2015. Multiple regressions were employed to analyze data on such variables Gross Domestic Product (GDP), foreign exchange rate, import, export, trade openness, and inflation rate were all found to have significant effects on the Economics Growth with the Adjusted R^2 of 0.9468% (approximately 95%). Based on the finding, it was concluded that foreign trade (proxied by import and export) have positive significant impact on economic growth in Nigeria. But exchange rate has positive significant impact on export but has negative significant effect on import. The study recommends that government should put all things together by enabling a business environment to stimulate foreign trade.

RESEARCH METHOD

The study considers the usage of ex-post facto research design. The model of Obi, Oniore and Nnadi (2016) was adapted with modifications. The model for the present study is stated as;

$$RGDP = f\ (RER, INF, FDI, DOP) - 3.1$$

$$lnRGDP = \alpha_0 + \alpha_1 lnRER_t + \alpha_2 lnINF_t + \alpha_3 lnFDI_t + \alpha_4 lnFDI_t + U_t - - - - - - 3.2$$

Where:

RGDP = Index of Gross Domestic Product (Real GDP) expressed in constant term; *RER* = Real exchange rate; *INF* = Inflation rate; *FDI* = Foreign direct investment; *et* = error term

The study used Autoregressive Distributed Lag model (ARDL) econometric tool in analyzing the relationship between foreign exchange management and economic growth in Nigeria.

RESULT AND DISCUSSION

Unit Root Test (ADF)

Variables	Test statistics	Critical value	Order of Integration
RGDP	-5.931529	-3.574244	I(1)**
RER	-6.886162	-4.416345	I(0)***
INF	-3.295365	-2.998064	I(0)**
DOP	-5.939170	-3.574244	I(I)**
FDI	-3.680266	-2.998064	I(0)**

*Note: * (**) (***) denotes null hypothesis at 10%, 5% and 1% level of significant respectively*
Source: E-view 9.0 (2018)

The result of the table shows that real exchange rate, inflation and foreign direct investment attained stationarity at level and at 1% and 5% level of significance respectively. Real gross domestic product and degree of openness variables attained stationarity level after differencing i.e. at first difference and at 5% level of significance. The economic implication of this is that any shock or disturbance (e.g. government policy) passes to the variables will not be sustained for a long period of time meaning such shock will die off in a short while. Since there are mixtures of I(0) and I(1) variables. Autoregressive Distributed Lag model (ADRL) will be adopted and bound test will be used to capture the presence of cointegration as against Johansen cointegration.

ARDL Bound Cointegration

NULL HYPOTHESIS	**F - STATISTIC**	**CRITICAL VALUES BOUNDS**		
		Significance	Lower Bound	Upper Bound
No long-run relationships exist	14.15116	10%	3.03	4.06
		5%	3.47	4.57
		2.5%	3.89	5.07
		1%	4.4	5.72

Source: E-view 9.0 (2018)

The result of the table revealed that the F-statistics of 14.15116 is greater than the Upper Bound table value at any % level of significance. The study rejects the null hypothesis. This is interpreted as there is long-run relationship among the variables, that is, the variables co-move on the long run. This implies that study can proceed further to the long run analysis and the short-run dynamic and error correction analysis.

Long and Short Run Estimation Coefficients

The below table explains the long-run relationship among the variables

Variables	Coefficient	Standard Error	Probability
RGDP	4.901337	1.562953	0.0518
RER	18.086543	5.121824	0.0026
INF	-0.648185	0.920509	0.5321
DOP	0.417833	0.486235	0.4533
FDI	0.202509	0.402362	0.6494

Source: E-view 9.0 (2018)

The result of the table indicated that the coefficient of real gross domestic product is positive and statistically significant. This implies that if all the variables are held constant, real gross domestic product will increase by 49%. The coefficient of real exchange rate is positive and statistically significant which shows the existence of a positive and significant long run relationship between real exchange rate and economic growth in Nigeria. A percent change in the real exchange rate will bring about 18. 08% increases in real gross domestic product.

The coefficient of inflation rate revealed a negative and statistically insignificant relationship with economic growth. Hence, a unit increase in inflation rate will further decrease economic growth by 64%. Furthermore, the coefficient of the degree of openness indicated positive and insignificant result, by revelation this implies that 1% increase in degree of openness will lead to 41% increase in economic growth in Nigeria.

The coefficient of foreign direct investment positions a positive and statistically insignificant relationship with real gross domestic product. As a result, 1% increase in the foreign direct investment will increase the real gross domestic product by 20% change

The Short-run Dynamic and the Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP)	0.704243	0.125880	5.594539	0.0000
D(RER)	13.586237	3.260591	4.166801	0.0006
D(INF)	-0.520017	0.261589	-1.987916	0.1410
D(DOP)	0.886427	0.053639	16.525700	0.0005
D(FDI)	0.061937	0.064031	0.967298	0.4047
ECM(-1)	-1.388651	2.429396	-0.571603	0.0046

Source: Author's Computation, (2018).

The result in the above table indicates that the coefficient of the error correction term ECM(-1) has the correct sign and significant at 5% level. The value of the coefficient is -1.388651. The result shows that about 13.88% of the short-run inconsistencies are being corrected and incorporated into the long-run equilibrium relationship in each period.

The coefficient of real exchange rate depicts significant positive effect on economic growth, hence 1% change in real exchange rate will yield to about 13.58% in economic growth. The significant result of real exchange rate is in relationship with the longrun result. Inflation postulates a negative and insignificant effect on economic growth by 52% change decrease. Degree of openness reveals a significant positive effect on economic growth which implies that 1% change in degree of openness will bring about 88% increase in economic growth. Foreign direct investment reveals an insignificant positive relationship with economic growth, therefore 1% increase in foreign direct investment will increase economic growth by 6%.

Autocorrelation Test (Breusch-Godfrey Serial Correlation LM Test)

F-statistic	2.193582	Prob. F(2,1)	0.4308
Obs*R-squared	21.98809	Prob. Chi-Square (1)	0.3012

Source: E-view 9.0 (2018)

The null hypothesis is that, there is no autocorrelation in the error terms versus it alternative hypothesis of serial dependence among the error terms. The F-statistics in the result of the autocorrelation test has a probability value of 0.4308 (43.08%) which is greater than 5% level of significance, hence the null hypothesis of no autocorrelation is accepted, the result of this analysis is reliable and free from serial error correlation.

Heteroscedasticity Test (ARCH)

F-statistic	3.640802	Prob. F(1,30)	0.0684
Obs*R-squared	3.424678	Prob. Chi-Square(1)	0.0642

Source: E-view 9.0 (2018)

The null hypothesis is that, there is homoscedasticity of variance against its alternative of heteroscedasticity of variance. The F-statistics in the result has probability value of 0.0684 (6.84%) which is greater than 5% level of significance, hence the null hypothesis of homoscedasticity is accepted, therefore the result of this analysis is reliable and free non constant variance.

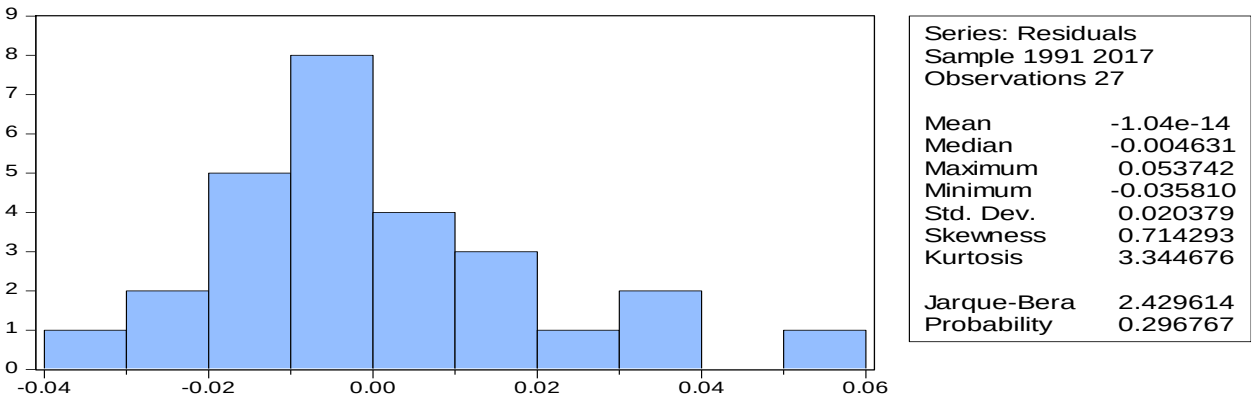
Stability Test (Ramsey RESET Test)

Null hypothesis	Probability
The model is fit	0.1962

Source: E-view 9.0 (2018)

The null hypothesis is that, the regression model fit the data well versus its alternative hypothesis of invalid regression model. The F-statistics in the result has a probability value of 0.1962 (19.62%) which is greater than 5% level of significance, hence the null hypothesis that the regression model fit the data well is accepted, hence the parameter estimate in this model are stable over time.

Normality Test



Source: Authors Regression Output, (2018)

The assumption of the OLS estimate and statistical inferences of the ARDL estimation technique adopted is based on normality. Violation of the normality assumption may render the outcome of the regression analysis invalid though this is not strictly the case unless forecasting is the main objective of the modeling and also OLS estimate is consistently estimated and normality will hold asymptotically. The normality assumption is tested for using the residual from the regression result. The probability value of the Jarque-Bera statistics in the Figure 1 above has the value of 0.296767 (29.6767%) which is greater than 5% level of significance, hence the null hypothesis of normality is accepted, and therefore the residual of this analysis is normally distributed.

DISCUSSION AND IMPLICATION OF FINDINGS

According to the empirical findings, the Augmented Dickey-Fuller (ADF) unit root test reveals that there is mixed I(0) and I(1) unit root stationarity in the result. Hence, Pesaran ARDL bound test was used to test for the presence of cointegration among the variables as it

suits this study and the result showed an evidence of long run relationship among the variables.

The study reveals that there is long run relationship between foreign exchange management and economic growth. From the result of the ARDL long-run cointegrating coefficient, study reveals that the coefficient of real gross domestic product is positive and statistically significant. This implies that if all the variables are held constant, real gross domestic product will increase by 49%. The coefficient of real exchange rate is positive and statistically significant which shows the existence of a positive and significant long run relationship between real exchange rate and economic growth in Nigeria. A percent change in the real exchange rate will bring about 18. 08% increases in real gross domestic product. This implies that depreciation of the currency in Nigeria stimulate economic activities during the period of exchange rate deregulation regime and it is in consonance with the aspirations of policy makers in the adoption of exchange rate reforms. This finding goes to justify the deregulation of the exchange rate embarked upon by the Federal government in 1986. Interestingly, the finding is in line with Obi *et al* (2016) who concluded a significant positive effect of real exchange rate on economic growth.

The result of inflation rate reveals a negative and statistically insignificant relationship with economic growth, this implies the existence of negative and insignificant long run relationship between inflation rate and real gross domestic product. Hence, a unit increase in inflation rate will further decrease economic growth by 64%. Inflation which measures the changes in the general price level impacts on growth by influencing savings, consumption and investment. Macroeconomic theories have confirmed that the general price level in an economy is a determinant of economic growth. The implication of the finding is that the Nigeria economy will be experiencing continuous and consistent rise in general price resulting in high inflationary trend and devaluation in the value of naira. This rise in price will in turn provoke labour into further agitation for wage increase. This is what the monetarists termed 'cost push inflation'. This finding is in connection Oleka and Okolie (2016), that high inflation rate impacts negatively on economic growth in Nigeria.

The result from the study further reveals that the degree of openness indicated positive and insignificant result, by revelation this implies that 1% increase in degree of openness will lead to 41% increase in economic growth in Nigeria. The insignificant positive effect of openness indicates that the recent trade liberalization efforts in Nigeria have not resulted in better economic growth and benefited the poor. Most often, the export volume is dominated by crude oil whose price and quantity are determined in the international market and has little or no relation with economic reality in the Nigerian economy. In the case of imports, the volume is skewed towards semi-processed goods deceitfully packed as raw materials when being imported; this hindered the development of the local industries which simultaneously hinder speed economic development in the country. This result validates the study of Obi *et al*, (2016) who concluded an insignificant positive relationship between degree of openness and economic growth in Nigeria.

The coefficient of foreign direct investment will post a positive and statistically insignificant relationship with real gross domestic product. This shows that there is positive and insignificant long run relationship between foreign direct investment and real gross domestic product in Nigeria. A percent increase in the foreign direct investment will increase the real gross domestic product by 20% change. The insignificant contradicts the conclusion of Egbo

(2010) who concluded a positive and significant relationship between FDI and economic growth. The reason for the non-conformity with Egbo (2010) could be attributed to the unsuitable and disadvantageous macroeconomic environment in Nigeria, like the general price level, interest rate, exchange rate etc. However, this result is in connection with Ugochukwu, Okoro and Onoh (2013) who concluded insignificant positive relationship between inflation rate and economic growth.

The result of the short run depicted positive and significant between real exchange rate and economic growth as obtained in the longrun test. Inflation postulated a negative and insignificant effect on economic growth as obtained in the longrun. More so, degree of openness revealed positive significant in the short run against the insignificant it recorded in the long run. The result of foreign direct investment conformed to the positive and insignificant effect as recorded in the long run. Also, there was evidence that disequilibrium in real GDP is restored back to equilibrium within a year if there is any short run fluctuation in the explanatory variables because the coefficient of the ECM was significant with the correctness of its sign though with small magnitude. Diagnostic test revealed that the model used in this study passed the test of autocorrelation, heteroscedasticity, instability and non-normality. This signifies that the result from the findings can be used by the researcher and the policy makers for recommendation and forecasting. The study is in consistence with the study of Fapetu and Oloyede (2014) and Amassoma and Odeniyi (2016) who concluded that foreign exchange management impacted positively on economic growth in Nigeria.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Collectively, a healthy and vigorous economy will strengthen its currency to be demanded for worldwide. Such value can be displayed by the degree of active productivity of an economy. Larger productivity in an economy will adequately enhance the value of its currency (Oleka *et al*., 2014). Its effects are more prominent if the increase is in the traded sector. Unlike Nigeria naira that lagged behind and at compassion of dollar, pound and euro, Chinese YUAN is waxing stronger and stronger in the foreign exchange market because of increasing productivity recorded in China. The estimated result emanating from the analysis and discussion section of this study indicated that the variables considered in the model are stationary both at level and first difference respectively and have long run co-movement.

The findings of the study records that real exchange rate has positive and significant effect on economic growth; inflation rate reveals a negative and insignificant effect on economic growth; degree of openness indicates positive and insignificant effect on economic growth and lastly foreign direct investment displays positive and statistically insignificant effect on economic growth in Nigeria. Relating these findings to the submission of Fapetu and Oloyede (2014) it is obvious that foreign exchange management does affect economic growth owing to the fact that the key control variables; real exchange rate, degree of openness and foreign direct investment are found to positively affect the Nigerian economic growth. Also, interestingly in this study is the fact that the response of RGDP to policy initiatives on foreign exchange management takes slowly take cognizance of the adjustment of the variables to yield long run result with the 13.88% recorded as the Error Correction Coefficient.

In conclusion, the study concludes that foreign exchange management has positive and insignificant effect on economic growth under study review in Nigeria. The result is in connection and in consistence with the study of Amassoma and Odeniyi (2016) who concluded a positive and insignificant relationship between exchange rate and economic growth in Nigeria.

Recommendations

The study proffers the following recommendations;

i. Investors should consider variations in other macroeconomic variables rather than variation in the exchange rate market to guide their decisions in order to ascertain where to direct investments for profit maximization.

ii. The monetary authorities should design policies and programs that will curtail the rising inflation rate thereby encouraging investors to invest in Nigeria.

iii. The Nigerian government should facilitate an investment friendly environment, enhance investors legal protection, streamline procedures for business visas and entry of foreign workers and reform land policy.

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