INCOME INEQUALITY, POVERTY ALLEVIATION AND ECONOMIC GROWTH IN NIGERIA

(1970-2020)

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CERTIFICATION

I certify that this research project was conducted under my supervision by Ade-Omonijo Collins Eyitayo (17020301008) at the Department of Economics, Mountain Top University, Ogun State, Nigeria.

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DEDICATION

This project is dedicated to the I AM THAT I AM, THE ALMIGHTY GOD.

ACKNOWLEDGEMENTS

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ABSTRACT

This study examined the relationship between income inequality, poverty and economic growth. It also analyzed the impact of income inequality on economic growth, the effect of poverty on economic growth and assessed the impact of income inequality on the effect of economic growth on poverty.

This study made use of annual times series secondary data. Data on GDP, inequality, poverty, population, public expenditure on education, corruption, unemployment, per capita income and inflation were sourced from World Development Indicators (2020), Central Bank of Nigeria Statistical Bulletin (2020), National Bureau of Statistics (2020) and Kneoma (2020). The data collected were analysed using econometric techniques, particularly, Auto regressive Distributed lag (ARDL) Model. The analysis performed are unit root, using both Augmented Dickey-Fuller (ADF) test and the Phillip and Perron (PP) test, the lag order of the ARDL models using VAR lag selection criteria and bound test.

The results showed that income inequality has a negative but insignificant impact on economic growth in Nigeria. While poverty has a negative but insignificant relationship with economic growth, income inequality and economic growth has a negative but significant relationship with poverty .

In conclusion, to lessen the level of inequality and poverty that will ensure Nigeria's economic growth and development, there is the need for plausible and viable economic policies and strategies. For instance, government should empower people in rural areas by funding projects and creating productive activities to generate higher income for a better life.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The notion of inequality and poverty is on the coronary heart of sustainable financial improvement. The paradox of growth in Nigeria is that as the country gets richer, only a few benefits and most individuals continue to suffer from poverty and deprivation (0xfam, 2017). Inequality is described as the distinction of the standard of living among individuals in a country and the difference among the same old of residing throughout a populace (Gallo, 2002). According to Clark (2015), over 70% of the populace in growing nations stay in distinctly unequal societies. There are diverse kinds of inequality which include: gender, wealth, fitness, and income. The maximum popular one among them is income inequality and is a developing hassle globally and more glaring in developing countries like Nigeria. Income inequality is defined as the disparity in income or wealth between the wealthy and poor individuals in a country.

Poverty on the other hand, is a general issue affecting an individual understanding, economy, politics and personality (Ewhrudjakpor, 2008), it is described as the absence of basic necessities of life such as food, shelter, health care and safety that cannot fulfill the social and economic indicator. Valentine (1968) as quoted in Bradshaw (2006) noted that the inherent nature of poverty is inequality meaning poverty is relative deprivation. It is outrageous because it has been growing in the context of an expanding economy where the gains have been coaxed by a minority of the people and have engrossed the majority of

people. The poorest people are being deprived of their fair share and the scale of economic inequality has reached extreme levels and finds expression in daily efforts of the majority in the pace of gathering massive wealth by the minority. Different studies have counseled that developing countries that deprive elements of fundamental human rights like freedom of expression are likely to encounter poverty and inequality because development of a nation begins with the input of individuals on matters that are more crucial to them (Human rights watch, 2015).

The overriding philosophy is that increased in the economy growth is expected to reduce poverty and narrow the gap between the wealthy and the poor. The channel runs through increased output and income to the re distributive impacts of economic expansion by way of economic rent to the production factors. Various studies have emerged within different ideological view on the nature of nexus that exists among income inequality, poverty and economic growth. (Aghion, Carol and Garrcia,1999) proposed that economic expansion will cause increased income, which simultaneously reduce poverty and inequality. On the other hand, Ravallion (2001) proffered that economic growth could even result from higher income difference and increased poverty. However, there appears to be a discretion that growth causes higher income, which could narrow the gap between the rich and the poor, as well as reduce poverty.

The problem of inequality in Nigeria started between 1985 and 2004, where the country`s Gini coefficient increased from 0.43 to 0.49 and it made Nigeria among the most unequal countries in the world (Dali, 2015). Poverty rate increased from 27.2 % in 1980 to 42.7 & in 2004 and further to 65.6% in 2010. While the 27.2 percent for 1980 equals 17.7

million in 2010, 112.5 million were found poor in absolute terms out of proposed population of 200 million ((National Bureau of Statistics). Nigeria is one of the few African countries where both the number and rate of poverty increased from 69 million to 112 million in 2010, equivalent to 69% of the entire population, still in the same period, the percentage of the rich increased by approximately 44% and income inequality grew from 40% in 2003 to 43% in 2009). Subsequently, poverty level rose from 53.3% in 2003 to 61.2% in 2010, while income inequality widened from 40.0 % in 2004 to 42.95% in 2010. It was indicated that Nigeria's GDP grew at an annual average of 5.6% between and 2006 and 2013 (National Bureau of Statistics), steady growth could not create wealth and jobs to improve the overall standard of living, narrow poverty levels and reduce income inequality. According to the world bank, the human development index in 2011 puts Nigerian at 156th position out of 177 countries, its human poverty index for 2009 was only 36.2% which made Nigeria among the 7th poorest nations in the world while the percentage of the wealthiest percent to the poorest 10% was 16.3c Gini index from 42.9 in 2004 to 44.7 in 2010.

Nigeria has an increasing rate of poverty at the country wide degree, excessive unemployment price, excessive earning inequalities, low quality of human capital, high rate of population on welfare and high out migration in the face of economic growth measured by the GDP. The extent of poverty depends on the income level and its distribution was found to be important to poverty reduction and polarization in distribution contributes to increase in poverty and no proof to trickle down the phenom based on fact.

1.2 Statement of Research Problem

The connection between poverty, inequality and economic growth has been a subject of intense debate among economists and policymakers. Some argued that income inequality enhances growth while others believed that it depresses growth thereby increasing the poverty rate of an economy. Despite the large and burgeoning literature, the relationship remains at best inconclusive. More so, most studies focused on either the connection between economic growth and inequality or economic growth and poverty and evidence in the literature shows that most of the studies on economic growth, inequality and poverty conducted in developed and developing countries like Philippine, Australia, France etc. However, to Nigeria, to the best of knowledge, there has not been any significant study on the relationship between the three variables relationship. Findings from the cross sectional studies may not be applicable to individual countries especially those that are not in the sample countries. Hence, generalization from such studies may not economically reliable.

In fact, based on the evaluation of the literature, studies especially on Nigeria examining the nature of the nexus between poverty, income inequality and economic growth are scanty. This study, thus, fills the gap.

1.3 Research Questions

The following questions will direct the course of the study:

1. what is the impact of income inequality on economic growth?

2. what is the effect of poverty on economic growth?

3. what is the impact of inequality on the effect of economic growth on poverty alleviation?

1.4 Research Objectives

The broad objective of this study is to examine the relationship between income inequality, poverty and economic growth in Nigeria. The specific objective includes to:

1. determine the impact of income inequality on economic growth.

2. investigate the effect of poverty on economic growth.

3. examine investigate the impact of inequality on the effect of economic growth on poverty alleviation.

1.5 Research Hypothesis

To achieve the objectives of the study, the following null and alternative hypotheses are formulated:

1. H_0: There is no impact of income inequality on economic growth.

H_1: There is impact of income inequality on economic growth.

2. H_0: There is no effect poverty on economic growth.

H_1: There is effect of poverty on economic growth.

3. H_0: There is no impact of inequality on the effect of economic growth on poverty alleviation.

H$_1$: There is impact of inequality on the effect of economic growth on poverty alleviation.

1.6 Significance of the study

Income inequality and poverty has clearly been a restraining factor on Nigeria's economic recovery, growth and development. Regardless of the impressive growth and major economic rectification policies, the search for poverty-reducing growth strategies remains a perpetual question as poverty and inequality persists unabated. The importance of this study is based on the fact that it aims to observe the correlation that exists between income inequality, poverty and economic growth in Nigeria. By carrying out various econometric technique, the extent to which the factors are inter-related will be established. Also, the study examines the influence poverty and income inequality has on economic growth as well as it impact on the economy. The outcome of this study are eminent because they give a platform for policymakers, government and academia to proffer solutions to reduce income inequality and alleviate poverty for high attainable rate of economic growth.

1.7 Scope of the study

The research work is confined to the Nigerian economy. Therefore, the considered data were those relating to the Nigeria economy. The study employed the use of secondary data. The time frame for the data used in the study covers (1970-2020) which is a period of 50 years. It is thought that this period is sufficient to capture the effect and the long-term connection between income inequality, poverty and economic growth.

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1.8 Organization of the study

This study is divided into five chapters. Chapter one contains the general introduction providing the background to the study, statement of research problem, scope of the study, significance of the study, research objectives, research questions and the research hypothesis. Chapter two portrays the conceptual and theoretical reviews, as well as the empirical review with its implication for the current study. Chapter three provides the theoretical framework of the study and the methodology employed. It also contains the specification and estimation of the model. While Chapter 4 presents the empirical analysis and interpretation of the estimated models, chapter 5 depicts the summary, conclusion and recommendation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter is divided into four segments. Section 2.2 focuses on the conceptual review while Section 2.3 presents the theoretical review. Section 2.4 depicts the empirical review and summary of the gaps in literature is presented in section 2.5.

2.2 Conceptual Review

2.2.1 The Concept of Income Inequality

According to Ray (1998), economic inequality occurs when one person has a higher income than another despite having the right to choose material resources, but is denied the same thing. Income inequality is defined as the unfair apportion of income and profits among members of a group characterized as certain collection group of people, a business, an economy, or a society. Income disparity can be measured in variety of ways using the Lorenz curve, the Gini coefficient and the General Entropy. The Gini coefficient is the maximum often used degree, it is derived from the Lorenz curve, which is a cumulative frequency curve that compares the distribution of variables such as income with a uniform distribution which represents equality (World Bank, 2005). Its measures income inequality based on Lorenz curve and has its values between 0 and 1 inclusive where figures towards 0 indicates greater equality within side the distribution, figures closer to 1 shows higher inequitable distribution of income while 0 signifies absolute equality in the distribution. Also, the Lorenz curve shows the percentage of total income earned by a cumulative percentage of the population.

The higher the level of equality in a country, the closer the Lorenz curve is to the 45^0 line and the lower the Gini coefficient. Similarly, the closer the higher the level of inequality in a country, the further the Lorenz curve is from the 45^0 line and the higher the Gini coefficient. Some of the elements that cause inequality as cited through different research are educational level, influence and technological level of the country. According to the neoclassical school, inequality in income is as a result of various productive activities of an individual or group of people leading to different wages and income ranges.

2.2.2 The Concept of Poverty

There is no applicable definition of poverty due to the character of poverty and its multi-dimensional effect on the household. According to the World bank (2011), poverty is the economic condition in which people lack earnings to achieve minimum levels of standard of living. It is described as the disability to achieve the lowest living standards. Poverty in its most universal sense, is the absence of vital demands including food, shelter, medical care and safety which can be typically important for reflection (Bradshaw, 2006). The diverse measures of poverty leads to two perspectives which are "income poverty" and "lack of basic need poverty". Income poverty happens while a person does not have sufficient money to fulfill up with a sure popular of dwelling whilst loss of fundamental wants. Poverty takes place while is not able to fulfill a number of the fundamental wishes along food, safe haven and apparel according to United Nations, Children Fund (UNICEF, 2016).

2.2.3 The Concept of Economic Growth

Economic growth is primarily a quantitative term, and any major process in empirical and theoretical examination of the phenomena of growth must take into account the quantitative part of fundamentals (Kuznets). Economic growth can be usually defined as the beneficial shift within side the number of products and facilities generated by a nation over a certain span moment. In other phrases, economic growth is a upward thrust in the gross domestic product (GDP) and its far relatively simple metric of production and gives an knowledge of how well off a nation is relative to rivals and beyond overall performance. It can also be explained as an outward shift of the Product Possibility Curve (PPC). It is identified by an increase in the gross output and the output and the real Gross Domestic Product (GDP) or the Gross National Product (GNP) of a country.

The Gross Domestic Product (GDP) of a country can be stated to be the total value of final goods and services that is produced in a country during a period of time. Equivalently, an increase in a country's productive activity. The growth of an economy does not take place in isolation. It is one of the important measures of a healthy economy. One of the largest impact of the long term growth of a country is that it has a direct impact on national income and the unemployment level of an economy which has a direct relation on the standard of living. When the GDP of a country increases, it is more productive its results to employment of more people.

2.3 Theoretical Review

2.3.1 Theories of Inequality and Poverty

2.3.1.1 The Individual Attribute Theory

This theory proposed that the motive of poverty and inequality cannot be fully be blamed on the productive activities of capitalists in an economy but rather individual characteristics, that is, the area of a person withinside the society's rating of income and wealth which become ascertained to be determined, through the motivations, attitudes of such individual (Mc Clelland 1961, Hagen 1962). The poor are assumed to be accountable for creating their problems through lack of hard work choices and bad choices. Neo classical economists reinforce individualistic origin of poverty with the assumption that people are responsible for their choices in maximizing their well being through wise investment. The theory depicts the poor as moral hazard with claims that poverty continues because the poor are engaged in activities which are counter-productive.

2.3.1.2 The Capitalist Entrepreneurial Theory

The concept presents the view that the price of meagre wage rates, in addition negative and poor working conditions, are way of exploiting the loads of employees and excessive saving and capital accumulation. This results in inequality in income distribution which may likely foster and boost up poverty most of laboring hundreds.

2.3.1.3 The Power Theory

This theory states that in preference to characteristize someone's failure or fulfillment to the capitalist mindset, the person mindset of geographical forces, the political form of the financial system ought to be held responsible due to the fact that a person is poor and not

dependent on the morphology of bureaucratic power in the society, which arbitrates the ambit and share of inequality and poverty among the population.

2.3.1.4 The National Circumstantial Theory

This theory states both actions of capitalist and individuals attribute cannot explain poverty and inequality enough. It is important to identify other components including natural resources and geographical structure of the environment in which people dwell in addition to employment including the young and antique, bodily disabilities as culprits of inequality and poverty.

2.3.1.5 Culture Theory of Poverty

A dominant advocate of this school was Oscar Lewis (1966). The ideology proposed that a person's poverty cannot be blamed on the geography, or political power structure. Man is the starting point of his own very poverty. Poverty is inherent and characteristics like laziness, lack of education, single female headed family makes it powerless to favourably scramble for economic liberty and convenience. As such this manner will become a culture for man which he passes on from one generation to another hereby resulting to vicious cycle of poverty (Jordan 2004). It is a reaction to low income and lack of opportunities such that people live for the present and believe in luck rather than effort to achieve success. This philosophy, however, remains argumentative among researchers of poverty and policy makers.

2.3.1.6 Theory of Social Exclusion / Cumulative Disadvantage

The concept of poverty has redefined and broadened in recent years to cover other part of human existence. From the 1990's, the European union has focused on social

exclusion to cover other forms of deprivation of rights, goods and services, obtainable to the majority of people in a community, and the inadequacy to perform in the right activities, either in the social, cultural, or political arenas (Levitas, 2007). Income generated from a productive activity determines one's level of poverty and is a significant measure of the degree of isolation, stigmatization and sense of belonging to a community (Stewart 2009). It is being associated with unemployment and level of income (Galie, 2005) however notes that these are dependent on socio-cultural factors such as household structure and pattern of local sociability in different contexts.

2.3.1.7 Economic Theory of Poverty

In this theory, poverty emerges from the morphology of the economy. Part of the determinant of poverty is differing employment stage and character of earning distribution. Surprisingly, a person is poverty bothered now no longer due to his laziness however because of the truth that he lacks, the possibility to work. He becomes poor resulting from the defective monetary device that deprived him is part of income and equity, a dominant supporter of this ideology was Rainwater Lee (Jordan, 2004).

2.3.1.8 Marxist view of Poverty and Inequality

According to Marxist view, the main cause of poverty is inequality or unequal apportion of wealth and income which is a main disadvantage of capitalism. Multiple national organizations and bureaucracies are responsible for this cause. Any community with inequality is obliged to breed poverty. In other words, poverty is much likely to arise in a society which accepts inequality. Sociologists who receive the relative definition of poverty

accepts that for the eradication of poverty, and its far vital to abolish all inequality in income (Debroy and Bhandari, 2007).

2.3.2 Theory of Income Inequality and poverty on Economic growth

2.3.2.1 Simon Kuznets Theory

The nexus between income inequality and economic development has been popularized by the Kuznets inverted-U curve (Kuznets, 1955) which argued that income inequality tends to increase at the early stage of development and reduces as the economy develops, implying that income inequality will fall as income continues to increase in developing countries. However, when income has kept rising and reached a high level, income inequality increases again. The perceptive insight of the inverted-U curve is that when an economy's income is at a low level, rich individuals are very few and the Gini coefficient will be high. At early stage of economic richdom, as the economic grows with increasing inequality, the people who suffer from the high values of inequality are known as poverty-stricken people, thus the negative effect of growth on inequality also results in increasing value of poverty following the positive relationship between the level of inequality and poverty affecting an individual in an economy. As the total income increases, it is accompanied by a rise in employment and job availability resulting in upward mobility on the income step, and a middle class of income earners will come forth, thereby improving the Gini coefficient. He predicts that inequality improves as income expands. However, when an economy's income level continues to rise to a high level, there are more individuals who could achieve high incomes and while the most of the population is engaged in paid jobs, income inequality deteriorates as a result. Portfolio investment and windfall gains from

speculation in stocks and property, for example, can result in the rise of super wealthy individuals (Piketty, 2014).

2.3.2.2 The Poverty Growth Inequality Theory

In the growth elasticity of poverty discount, Bourguignon, explains that extrude within side the apportion of income may be broken down into two outcomes. First, there is the impact of a proportional change in all earnings that leaves the distribution of relative income unchanged refer to as growth effect. Secondly, there may be the impact of a change within side the distribution of relative earning which, by definition is not dependent of the mean called the distributional effect. He states in addition that the subsequent definitions assist to make clear these linkages.

Poverty is measured through absolutely the poverty head count index, the percentage of the populace beneath the poverty line (1$ a day) derived from the household survey data.

Inequality in income is distinction in relative income across the whole populace, that is, disparities in income after normalizing all observations by the populace to make them independent of the size of income.

Growth is the percentage modification in mean welfare level in the household survey and the level of increase in the social welfare of individuals.

A change in poverty can be shown to be a function of growth, distribution and its changes. For enough small changes in mean income and its distribution, the previous decompositions correspond to an identification which expresses the change in poverty as a function of the growth in mean income and changes in the apportion of relative income.

2.4 Empirical review

This section examines several studies done on poverty and income inequality and their relationship with economic growth in developed, developing countries and Nigeria.

2.4.1 Studies in Developing and Developed countries

Datt and Ravillion (1992) proposed a considerably more straight forward approach to poverty transformation into growth and inequality components. Their method had the advantage that it did not necessitate any assumptions about the distribution of probability. Furthermore, it might be used to differentiate discrete changes in poverty between two polls. It was a measure if short run relationship, but it couldn't possibly reflect long run impacts.

Galor (2000) promoted a "unified model" that reconciled the contradictory approach in terms of time. The classical methodology holds true at low income levels, but not at later phases of development, according to him, during the initial stages, physical capital is sparse at this stage of civilization, inequality would stimulate growth and its accumulation required savings. Inequality in income would then lead to higher levels of savings and quick expansion. As economic development progresses, the return to human capital increases and becomes the main engine of growth as a result of capital skill complementary.

According to Bourguignon (2003), there is yet no consensus throughout the economics declaration on the nexus between income inequality and growth. Early thinking about the consequences of inequality on growth, proposed that more inequality might be beneficial, for example by redistributing wealth from the poor to the wealthy. This view implied a trade-off where more growth could be obtained for a lower cost, increasing inequity with uncertain consequences for the poor. Bourguignon (2004) made a presentation of three

separate ways in which income inequality influenced growth, implying that the rich had a larger marginal propensity to save than the poor, meaning that they are more likely to save. Higher initial inequality would result in more aggregate savings and capital accumulation and as a result higher economic growth.

Lin (2003) suggested China's revel in the duration of 1985-2001. It was declared that the financial boom effectively reduced poverty, At the same time, the rising profit inequality brought on by the financial boom is causing concern and the effectiveness of the attempt to lessen poverty.

Kakwani (2003) discovered that the initial stage of economic growth and income inequality significantly impacted on the reduction of poverty in Australia. He concluded that growth alone was sufficient to alleviate poverty, institutions had an important role. A crucial role (Hasan 2007) looked into the role of the institutions in the same discussion. In the developed world's growth poverty nexus and discovered that good governance substituted by strong commitment to the rule of law was important for poverty reduction with a significant impact on economic growth.

Ravillion (2006) investigated the impact of profit disparity on poverty on India and China 1980-2000. He discovered that economic growth reduced poverty in both countries. The efficiency of the poverty discount was reduced as a result of profit inequality. In addition, he suggested that poverty reduction required a combination of monetary increases, as well as a type of social assistance. Earnings inequality is discounted in a "pro-negative" sample of the financial boom.

Le (2008) investigated the connection between poverty and boom, while on the other hand, initial inequality on the rise, but only at the provincial level in Vietnam. Even though there has been no relationship among the poor, poverty has become adversely connected with boom. Poverty and inequality became a force to be reckoned with be inextricably linked, since a reduction in one implies a reduction in the other. Poverty discount and inequality turned into additionally observed to be decided through human capital, funding, GDP boom price and change openness.

Perera (2013) explored the effect of economic growth and institutional attribute on poverty and income inequality in developing Asian countries including China, Indonesia, Malaysia, Philippines, Thailand, Bangladesh, India, Pakistan and Sri Lanka over the period 1985-2009 using the system generalized method of moments (GMM) estimation technique. The study's findings proposed that economic growth did occur and does not have a significant effect on income disparity, meaning that development in government stability and law and order were discovered to reduce poverty while improving the degree of corruption, democratic accountability and bureaucratic quality were found to increase poverty rates and worsened income distribution.

Cepparulo (2016) examined the interactive effect of financial improvement and institutional attributes on poverty reduction for 58 countries from 1984 to 2012 using institutional quality and financial institutions. The authors discovered that using GMM, the economic growth and institutional framework interaction had a large and positive impact. The substitution impact in the finance institution poverty relationship is suggested by the influence on poverty alleviation.

Fosu (2017) looked into the relation between poverty reduction and economic growth utilizing income disparity as a transition mechanism. Using both regional and country specific data, the poverty line was set at USD 1.25 and USD 2.50 (World Bank poverty data). The author discovered that income growth played a significant influence in alleviating and expanding poverty in developing countries and concluded that income growth was a primary element responsible for income inequality.

2.4.2 Studies in Nigeria

Kakwani (1993), defined the short run effect on growth on poverty was ascertained in such a way that the effect of growth on inequality could be examined subsequently influence poverty in form of elasticity which was ignored.

Aigbokhan (1997) looked at the poverty and its reduction in Nigeria, in a micro information evaluation that links macro to micro evaluation. He discovered that inequality was more noticeable in rural areas and at a later period in the city in the structural Adjustment Programme length. Inequality turned into additionally better amongst men in city regions however better amongst girls within side the rural regions. He continued his research by looking at the profile of poverty in Nigeria, which was based entirely on the structural coverage reforms in 1986 and reversal in January 1994. He made use of countrywide patron survey facts units for 1985/89, 1992/93 and 1996/1997 from the Federal office of Statistics at the electricity intake variation primarily based technique in poverty evaluation. He additionally tested the difference of profits distribution. The examined discovered evidence of increased poverty, inequality and polarization in distribution throughout observe. It turned into additionally observed that the country experience tremendous actual growth in the

duration with growing poverty and inequality for this reason the "trickle down" speculation changed into now no longer supported.

Niser (2003) likewise attempted to highlight the differences between absolute poverty and relative poverty. The study indicated that the various government intervention programmes has resulted in a significant decrease in poverty in Nigeria. A way to get around all these issues is to use regression methods or other empirical techniques.

Akanbi and Du Toit (2011) proposed a thorough macroeconomic model for the Nigerian model in order to provide a solution to the country's different experiences in the link between growth and poverty. Annual time series data from 1970 to 2006 were used, as well as Engle-Granger analysis which the results showed improved productivity to two step co-integration as estimation technique and necessary for long term, rapid growth and poverty reduction.

Ijaiya (2011) looked at the link between the economic growth and poverty reduction in Nigeria, and discovered that while initial levels of economic growth were insufficient to eliminate poverty, long term economic growth was critical.

Osahon and Osarobo (2011) examine poverty and income disparity in Nigeria from 1980 to 2008. The authors discovered that there is a positive association between as measured by private consumer spending and education.

Onyema (2012) investigated the changes of poverty and income apportion in Nigeria, asking whether the Nigeria middle class is rising statistically or economically. Using data from the general household survey (GHS) form 1996, the Nigeria Living Standard Survey (NLSS) from 2004, and the 2009/2010 Harmonized Household Survey (HHS). The findings

proposed that the current middle class in Nigeria is worse shape than it was in 2004 and 1996. The middle class is a fiction, because macroeconomic components and other consumer metrics are not statistically significant, they are not economically significant.

Awe and Rufus (2012) used the co-integration approaches, they explored the factors of income in the Nigerian economy, the Gini coefficient was discovered to be high, signifying more inequality. The unemployment rate, the inflation rate, and the gross domestic product are all factors to be considered. In Nigeria, product and social spending are true factors of income distribution term of study. Both growth rate of output and public health expenditures displayed an inverse employment, inflation rate have a relationship with the Gini coefficient of income distribution and expenditures on public education showed a direct association with the Gini coefficient of income.

Bakare (2012) used the OLS and Gini coefficient to investigate the relations between poverty and economic growth, and discovered that increase in economic growth did not essentially lead to a fall in poverty and an unfair distribution of income. The results indicated a depressing level of income inequality of the Nigerian economy.

Anyanwu and Hausken (2013) also found that income inequality reduced economic growth and increased poverty in the Middle east and North African (MENA) region. From the divergences of methods applied in the thesis and results came, it was found that a wide gap existed in the subject matter in Nigeria. Therefore, establishing both the theoretical and empirical relationship among economic growth, income distribution and poverty ae necessary and critical for economic planning, particularly as it relates to the challenges put forth by the 2015 Global Development Agenda in Nigeria.

Olagunju and Omonona (2014), based on data received from 120 rural homes in Ibadan, Oyo state Nigeria using a multi stage sampling technique, households in rural regions of Ibadan discovered that agriculture is the most important source of income and non-farm self-employment are rising inequality, necessitating the necessity to incorporate public streams into public development efforts providing financial empowerment to rural residents and promoting equal access to agriculture credit and other agriculture inputs. From 20007 to 2012, the public's effort to reduce poverty were focused and particularly examined in order to accomplish the Millennium Development Goal (MDG'S). The analysis found a lack of critical infrastructure as well as insufficient targeting of past poverty clients. Among the issues that could orchestrate the event are cost cutting efforts and corruption.

Muhammed (2014) investigated the trivariate causality between the economic growth, corruption, and income and using vector error correction model. The variables were discovered to have a long term association, and the findings were expanded upon shown that economic progress had an impact on corruption before it spread to the poor.

Ogbeide and Agu (2015) investigated the nature and direction of poverty related causality from 1980 to 2010. The authors used the Granger technique. For the time period, researchers discovered discovered a bi-directional correlation between inequality and poverty. As a result, the research was determined that policy actions should not be performed in isolation and that a policy targeted toward policies aimed at decreasing poverty should be backed up by policies aiming at reducing inequality.

Olofin (2015) investigated the determinants of poverty in Nigeria using Dynamic Ordinary Least Squares, with the focus on the institutional factors of poverty. The study's

findings demonstrated that political right, population, and political fear all had an impact on poverty becoming more prevalent. Civil liberty and democracy, on the other hand, had decreasing effects.

Ajisafe (2016) explored the effect of corruption on poverty in Nigeria using the secondary data from 1986 to 2014. Applying principal component analysis to generate an index for poverty and auto-regressive distributed lag as estimation technique, the author found that corruption has an adverse impact on poverty, thus reducing the state condition of the citizenry.

Akobeng (2017) compared the impact of economic growth on poverty and inequality. The generalized Least Square approach was used to investigate income discrepancies, and it was observed that both income disparity and the amount of human poverty decreased as a result of economic expansion.

Ebunoluwa and Yusuf (2018) assessed the impact of economic growth on poverty from 1980 to 2016 using cointegration technique. They discovered that economic growth had a major impact on poverty alleviation.

2.5 Gaps in the Literature

In conclusion, while there is a large body of literature on the relationship among income inequality, poverty and economic growth, many of them are limited to either the relationship between income inequality and economic growth or poverty and economic growth. Only a few have taken the three variables into account, with their impact of growth in Nigeria. Furthermore, the literature has not been updated in recent years. Thus, this study fills this gaps.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the general methodology employed in undertaking this study. Section 3.2 presents the theoretical framework, section 3.2 depicts the model specification, section 3.4 contains the sources of data. Section 3.5 presents the definitions and measurement of variables while section 3.6 contains the estimation technique.

3.2 Theoretical Framework

The theoretical framework of this topic adopts the Simon Kuznets theory of income inequality and poverty and the poverty growth inequality theory. His thesis implies that economic growth aggravates income inequality first and improves it later at a higher level of development. He proffered that people who suffer from the high value of inequality are known as poverty-stricken, thus the negative effect of growth on inequality also results in increasing value of poverty following the positive nexus between the level of inequality and poverty affecting people, thus the negative effect of growth on inequality also results in increasing value of poverty following the positive relationship between the level of inequality and poverty affecting an individual in an economy. As the total income increases, it is accompanied by a rise in employment and job availability resulting in upward mobility on the income step, and a middle class of income earners will come forth, thus improving the Gini coefficient. He predicts that inequality improves as income expands. However, when an economy's income level keeps rising to a high stage, there are more people who could

achieve high incomes and while most of the population is engaged in paid jobs, income inequality deteriorates as a result.

Under the poverty growth inequality theory, unequal circulation of income in the economy restricts people who are impacted negatively resulting from lack of opportunity to work and unemployment, hereby restricting them to cater for basic necessities as such as shelter, education and health care and the effect of a proportional change in all earnings that leaves the apportion of relative income unchanged.

3.3 Model Specification

The specification of the model expresses the mathematical relationship between the dependent variable and the model's independent variables. The model would evaluate the relationship between income inequality, poverty and economic growth.

In order to achieve objective one, to determine the impact of income inequality on economic growth, adapting the work of Hoi Quoc (2010) that stated economic growth is a function of inequality with few modifications, the study will estimate the following equation:

$$GDP = f(INQ) \tag{1}$$

Where GDP and INEQ are Gross domestic product and inequality. According to the equation, the gross rate of the gross domestic product depends on inequality. The theoretical and empirical literature point to a important number of variables to be considered including Population, public expenditure on education and corruption.

$$GDP = f(INQ, POP, PEXED, COR) \tag{2}$$

Convert equation to econometric model, we have

$$lnGDP_t = \beta_0 + \beta_1 lnINQt + \beta_2 lnPOP_t + \beta_3 lnPEXED_t + \beta_4 lnCOR_t + £_t \tag{3}$$

Apriori Expectation: $\beta_1 < 0$, $\beta_2 < 0$, $\beta_3 > 0$, $\beta < 0$.

Where inequality, population and corruption are negatively related to economic growth and public expenditure on education is positively related to economic growth.

To achieve objective two of this study, the wish to determine the effect on poverty on economic growth, also adapting the works of Hoi Quoc (2010) where he also postulated that economic growth is a function of poverty with few modifications which will be estimated in the following equation:

$$GDP = f(POV) \tag{4}$$

It shows that the gross domestic product depends on the poverty rate. Also in the theory, unemployment, inflation and per capita income are considered to be part of the changes in variables either positively or negatively.

$$GDP = f(POV, UNP, PCI, INF) \tag{5}$$

Convert equation to econometric model, we have

$$\ln GDP_t = \beta_0 + \beta_1 \ln POV_t + \beta_2 \ln UNP_t + \beta_3 \ln PCI_t + \beta_4 \ln INF_t + \pounds_t \tag{6}$$

Apriori Expectation: $\beta_1 < 0$, $\beta_2 < 0$, $\beta_3 > 0$, $\beta < 0$.

Where poverty, unemployment and inflation are negatively related to economic growth and per capita income is positively related to economic growth.

In order to achieve objective three of the study, which is to investigate the impact of inequality on the effect on economic growth on poverty alleviation. The study adopted the model of Ajibola, Loto and Enilolobo (2018). As such, it models poverty as a function of income inequality, Economic growth, Per capita income, and inflation rate. In order to obtain

poverty elasticity coefficients, a multiple regression model is estimated. The functional model is given below:

$$POV = f(INQ, GDPINQ, PCI, INF) \tag{7}$$

$$POV = f(GDP, GDPINQ, PCI, INF) \tag{8}$$

Converting the equation to econometric model, the interaction term $(GDP \times INQ)$ is included in order to access the impact of inequality on the effect of economic growth. In this case, either GDP or INQ is excluded to avoid potential multi-co linearity problems. The two alternative specifications will be as follows:

$$\ln POV_t = \beta_0 + \beta_1 \ln INQ_t + \beta_2 \ln GDPINQ)_t + \beta_3 \ln PCI_t + \beta_4 \ln INF_t + \pounds_t \tag{9}$$

$$\ln POV_t = \beta_0 + \beta_1 \ln GDP_t + \beta_2 \text{l} GDPINQ)_t + \beta_3 \ln PCI_t + \beta_4 \ln INF_t + \pounds_t \tag{10}$$

Apriori Expectation: $\beta_1 > 0$ and $\beta_1 < 0$, $\beta_2 > 0$ and < 0, $\beta_3 < 0$, $\beta_4 > 0$.

Where inequality, and inflation are positively related to poverty and per capita income and economic growth are negatively related to poverty.

GDP is Gross Domestic Product which is a proxy for Economic Growth and is the independent variable, INQ represents Inequality, POV represents Poverty, PCI is Per Capita Income, PEXED represents Public Expenditure on Education, UNP is Unemployment, POP is Population, COR is Corruption, INF is inflation which are the dependent variables, β_0, β_1, β_2, β_3, β_4 are parameters of the models, t is time and £ is the error term.

3.4 Sources of Data

Data collected for the analysis were selected based on the date and computational purposes of the research from the various sources including the following variables: Per capital income, Public expenditure on education, Public expenditure on health, Population

rate, Unemployment rate and Gross Domestic Product (GDP). The data sources included: World Development Bank Indicators (WDI), Central Bank Statistical Bulletin (CBN), National Bureau of Statistics (NBS) and Kneoma as shown in the table 3.1 below.

3.5 Definitions and Measurement of variables

The table below shows the variables, its definitions, types, and measurement of data collected for the purpose of this study.

TABLE 3.1

VARIABLES	SOURCES	DEFINITIONS	MEASUREMENT
GDP	WDI (2020)	Gross domestic product is a measure of the market value of all the final goods and services produced in a specific periodic time usually measured by the sum of what is produced in the economy.	Gross Domestic Product in (N billion)
INQ	WDI (2020)	Inequality refers to the disparity of the standard of living among individuals in the country usually measured by the Gini coefficient or Theil.	Inflation rate in (%)

POV	WDI (2020)	Poverty is a state of being poor, it is a situation in which a group of people are unable to meet the basic necessities of life usually measured by the head count ratio and per capita income.	Poverty rate in (%)
UNP	WDI (2020)	Unemployment refers to the number of people of not having job or a state of not having job. It occurs when people who are without work and seeking for job but currently without any usually measured by the unemployment rate.	Unemployment rate in (%)
POP	NBS (2020)	Population refers to the total number of people that reside in a country, state or city at a particular point in time usually measured by census.	Population in (billions)
PEXED	CBN (2020)	Public expenditure on education refers to the direct expenditure on educational institutional as well as educational public subsidies given to households and administered by educational institutions.	Public expenditure on education in (U.S dollars)

COR	KNEOMA (2020)	Corruption is a form of dishonesty or criminal offense which is undertaken by a person or an organization which is entrusted with a personality in authority in order to acquire illicit benefits or misuse power for one's private gain usually measured by the corruption perception index.	Corruption ranked in (Numbers)
PCI	WDI (2020)	Per capita income measures the average income earned per person in a given area in a specified year. It measured by divided the national income by the total number of population.	Per capita income in (%)
INF	WDI (2020)	Inflation refers to the persistence increase in the general prices of goods and services in the economy usually measured by the consumer price index.	Inflation rate in (%)

3.6 Estimation Technique

The estimation technique adopted in this study is the Autooregressive Distribution Lag, as employed by (Mbah and Umunna, 2018) to empirically analyze the long run impact and short run impact of economic growth in Nigeria. The approach allows the analysis of long term relations between variables, regardless of whether they are stationary at levels I (0) or at first difference I(1) or fractionally integrated. It also allows the simultaneous estimation of the short run and long run components, eliminating the problems associated with the omitted variables and the presence of autocorrelation. Furthermore, unlike the typical co-integration test, the technique allows for the use of multiple lags for distinct variables. The short run and long run parameters estimated using this approach are compatible in small samples such as the one used in the study.

Since time series data could be vulnerable to unit root problems, Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) unit root tests are implemented on the series to avoid spurious regressions. Unit root test are first conducted to determine the stationarity of the variables, which must be a combination of I(0) and I(1) series.

To obtain the optimal and appropriate number of lags for each variable, a lag length test is conducted by estimating single equator Vector Autoregressive (VAR) and using lag length criteria considering the Hanna-Quinn Information Criteria (AIC), the Akaike Information Criteria(SIC) , the Log Likelihood (LL) and the Final Prediction Error (FPE).

Furthermore, when one or all of the variables are non-stationary at level, which suggests they have a stochastic trend, the co-integration test is used to assess the long run relations between the dependent and independent variables. Essentially, it is used to check if

the independent variables can predict the dependent variables both in the short run and long run. Testing for co-integration is thus a test for the existence of long run equilibrium relations postulated. When it is established that variables are co-integrated (that is, there is a long run or equilibrium relations between them) in the short run, there may be disequilibrium. Error correction term is used to correct the disequlibrium.

In view of the above advantages, for objective, one the ARDL version of the model is expressed as:

$$\Delta \ln GDP_t = \alpha_0 + \sum_{i=1}^{a} \alpha_{1i} \Delta \ln GDP_{t-i}$$

$$+ \sum_{i=0}^{b} \alpha_{2i} \Delta \ln INQ_{t-i} + \sum_{i=0}^{c} \alpha_{3i} \Delta \ln POP_{t-i}$$

$$+ \sum_{i=0}^{d} \alpha_{4i} \Delta \ln PEXED_{t-i} + \sum_{i=0}^{e} \alpha_{5i} \Delta \ln COR_{t-i} + \beta_1 \ln GDP_{t-1} + \beta_2 \ln INQ_{t-1}$$

$$+ \beta_3 \ln POP_{t-1} + \beta_4 \ln PEXED_{t-1} + \beta_5 \ln COR_{t-1} + £_t \qquad (10)$$

where, Δ denotes the first difference operator, α_0 is the drift component and $£_t$ is the white noise error term. The β's corresponds to the long run effects while α's captures the short run dynamics of the model. Thus, from equation (9) in applying the co-integration test the study test the null hypothesis of co-integration $H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ against the alternative hypothesis $H_1 : \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$.

Furthermore, for objective two the ARDL model is expressed as follow:

$$\Delta \ln GDP_t = \theta_0 + \sum_{i=1}^{a} \theta_{1i}\Delta \ln GDP_{t-i} + \sum_{i=0}^{b} \theta_{2i}\Delta \ln POV_{t-i} + \sum_{i=0}^{c} \theta_{3i}\Delta \ln UNP_{t-i}$$

$$+ \sum_{i=0}^{d} \theta_{4i}\Delta \ln PCI_{t-i} + \sum_{i=0}^{e} \theta_{5i}\Delta \ln INF_{t-i} + \lambda_1 \ln GDP_{t-1} + \lambda_2 \ln POV_{t-1}$$

$$+ \lambda_3 \ln UMP_{t-1} + \lambda_4 \ln PCI_{t-1} + \lambda_5 \ln INF_{t-1} + \pounds_t \tag{11}$$

Where, Δ denotes the first difference operator, θ_0 is the intercept or drift component and $\pounds_t$ is the white noise error term. The λ's correspond to the long run effects while θ's capture the short run dynamics of the model. From equation (10), in applying co-integration tests the study test the null hypothesis of no integration H_0: $\lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = 0$ against the null hypothesis H_1: $\lambda_1 \neq \lambda_2 \neq \lambda_3 \neq \lambda_4 \neq \lambda_5 \neq 0$

Conversely, for objective three the ARDL version model is based on the automatic lag length selection. The study derived the short-run dynamic parameter from the Error Correction Model (ECM) estimation associated with the long-run estimate which is further expressed as:

$$\Delta \ln POV_t = \delta_0 + \sum_{i=1}^{a} \delta_{1i}\Delta \ln POV_{t-i} + \sum_{i=0}^{b} \delta_{2i}\Delta \ln INQ_{t-i} + \sum_{i=0}^{c} \delta_{3i}\Delta(\partial \ln GDP_{t-i}$$
$$\times \ln INQ_{t-i})$$

$$+ \sum_{i=0}^{d} \delta_{4i}\Delta \ln PCI_{t-i} + \sum_{i=0}^{e} \delta_{5i}\Delta \ln INF_{t-i} + \phi_1 \ln POV_{t-1} + \phi_2 \ln INQ_{t-1}$$

$$+ \phi_3(\partial \ln GDP_{t-1} \times \ln INQ_{t-1}) + \phi_4 \ln PCI_{t-1} + \phi_5 \ln INF_{t-1} + \pounds_t \tag{12}$$

$$\Delta \ln POV_t = \delta_0 + \sum_{i=1}^{a} \delta_{1i} \Delta \ln POV_{t-i} + \sum_{i=0}^{b} \delta_{2i} \Delta \ln GDP_{t-i} + \sum_{i=0}^{c} \delta_{3i} \Delta (\partial \ln GDP_{t-i}$$
$$\times \ln INQ_{t-i})$$
$$+ \sum_{i=0}^{d} \delta_{4i} \Delta \ln PCI_{t-i} + \sum_{i=0}^{e} \delta_{5i} \Delta \ln INF_{t-i} + \phi_1 \ln POV_{t-1} + \phi_2 \ln GDP_{t-1}$$

$$+ \phi_3 (\partial \ln GDP_{t-1} \times \ln INQ_{t-1}) + \phi_4 \ln PCI_{t-1} + \phi_5 \ln INF_{t-1} + \pounds_t \qquad (13)$$

where Δ denotes the first difference operator, δ_0 is the intercept and $\pounds_t$ is the error term. The ϕ's correspond to the long run effects where as δ's capture the short-run dynamics of the model. From equation (11) in applying co-integration tests the study test null hypothesis of no integration $H_0: \phi_1 = \phi_2 = \phi_3 = \phi_4 = \phi_5 = 0$ against the alternative hypothesis $H_1: \phi_1 \neq \phi_2 \neq \phi_3 \neq \phi_4 \neq \phi_5 \neq 0$.

The calculated F-statistics is compared to the critical value. If the F-statistics value lies above the upper bound of critical values, the null hypothesis is rejected. If the F-statistics value falls below the lower bound of critical value, the critical value would not be rejected that is, there is no long-run relationship among the variables, however, if the F-statistic value lies within the bound test the result is inconclusive.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF RESULTS

4.1 Introduction

The analysis of this chapter is divided into six sections. Section 4.2 contains the results of the unit root, lag length selection criteria and cointegration tests. Section 4.3 presents the empirical results of the impact of income inequality on economic growth. Section 4.4 reveals the empirical results of the effect of poverty on economic growth. Section 4.5 depicts the empirical results of the impact of income inequality on the effect of economic growth on poverty alleviation, while section 4.6 presents the summary of the discussion of the results.

4.2 Results of Unit Root, Lag Length Selection Criteria and Cointegration Tests

4.2.1 Unit Root Test Results

As a preliminary step, before the detail analysis of the Auto Regressive Distributed Lag (ARDL) model were undertaken, the variables were tested for stationarity. For this purpose, the study applied the Augmented Dickey-Fuller (ADF) and the Phillip and Perron (PP) tests. The ADF and PP test statistics is prompted by the fact that both tests are able to control higher order autocorrelation. Both tests statistics were done for two alternative specifications at 5% level of significance.

The table 4.1 upper panel (ADF test for intercept only) reveals that for intercept only economic growth proxy as real GDP, poverty, inflation and corruption are stationary at levels

since their ADF values (test statistics) is greater than the critical values at 5 percent in which they are integrated of order I(0) while inequality, per capita income, unemployment, public expenditure on education and population are were stationary at first difference I(1). The lower panel of the same table 4.1 ADF test for (trend and intercept) shows that economic growth, inequality, and poverty were stationary at level I(0) while per capita income, unemployment, inflation, public expenditure on education, population and corruption are stationary at first difference I(0).

Following the PP test as seen in table 4.2 below, the test results displayed in the upper panel (intercept only) shows that poverty and inflation are stationary at level I(0). The result of the variables stationary at first difference I(0) are economic growth, inequality, per capita income, unemployment, public expenditure on education and corruption. Also, the PP test results for panel two (trend and intercept) showed that economic growth, inequality, poverty, per capita income and corruption are stationary at level I(0). The results of the variables stationary at first difference I(0) are unemployment, inflation, public expenditure on education and population.

Table 4.1: Result of the Augmented Dickey-Fuller (ADF) Test

Augmented Dickey-Fuller (ADF) Test with Intercept only

Variable	Level						1st difference					
	Test statistic	Critical values			P-values	Remarks	Test Statistic	Critical Values			P-values	Remarks
		1%	5%	10%				1%	5%	10%		
lnRGDP	-5.69919	-3.568308	-2.921175	-2.598551	0.0000	I(0)	-10.71906	-3.57131	-2.922449	-2.599224	0.1637	I(1)
lnINQ	0.206222	-3.577723	-2.925169	-2.600658	0.9702	NS	-7.733668	-3.577723	-2.925169	-2.600658	0.0000	I(1)
lnPOV	-3.79273	-3.568308	-2.921175	-2.598551	0.0054	I(0)	-8.525292	-3.57131	-2.922449	-2.599224	0.0000	I(1)
lnPCI	-1.148447	-3.57131	-2.922449	-2.599224	0.6891	NS	-5.009295	-3.57131	-2.922449	-2.599224	0.0001	I(1)
lnUNP	-0.227462	-3.581152	-2.926622	-2.601424	0.9273	NS	-8.855587	-3.581152	-2.926622	-2.601424	0.0000	I(1)
lnINF	-3.488291	-3.568308	-2.921175	-2.59551	0.0124	I(0)	-7.269426	-3.574446	-2.92378	-2.599925	0.0000	I(1)
lnPEXED	-0.674275	-3.568308	-2.921175	-2.598551	0.8437	NS	-7.819358	-3.57131	-2.922449	-2.599224	0.0000	I(1)
lnPOP	-2.755201	-3.574446	-2.92378	-2.599925	0.0724	NS	-6.516665	-3.574446	-2.92378	-2.59925	0.0000	I(1)
lnCOR	-11.93444	-3.6005593	-2.936942	-2.606857	0.0000	I(0)	0.968905	-3.610453	-2.938987	-2.607932	0.9954	NS

Augmented Dickey-Fuller (ADF) Test with Trend and Intercept

Variable	Level						1st difference					
	Test statistic	Critical values			P-values	Remarks	Test Statistic	Critical Values			P-values	Remarks
		1%	5%	10%				1%	5%	10%		
lnRGDP	-5.71731	-4.152511	-3.502373	-3.180699	0.0001	I(0)	-10.69831	-4.156734	-3.50433	-3.181826	0.0000	I(1)
lnINQ	-6.50677	-4.15673	-3.50433	-3.18183	0.0000	I(0)	-7.655765	-4.165756	-3.508508	-3.18430	0.0000	I(1)
lnPOV	-3.808802	-4.152511	-3.502373	-3.180699	0.0242	I(0)	-8.486055	-4.156734	-3.50433	-3.181826	0.0000	I(1)
lnPCI	-1.537912	-4.156734	-3.50433	-3.181826	0.8026	NS	-5.00801	-4.156734	-3.50433	-3.181826	0.0009	I(1)
lnUNP	-1.772862	-4.170583	-3.51074	-3.185512	0.7016	NS	-8.585294	-4.170583	-3.51074	-3.185512	0.0000	I(1)
lnINF	-4.084849	-4.156734	-4.50433	-3.181826	0.0121	NS	-7.21468	-4.161144	-3.506374	-3.183002	0.0000	I(1)
lnPEXED	-2.38232	-4.152511	-3.502373	-3.180699	0.3840	NS	-7.833118	-4.156734	-3.50433	-3.181826	0.0000	I(1)
lnPOP	-2.86346	-4.161144	-3.506374	-3.183002	0.1831	NS	-6.370675	-4.161144	-3.506374	-3.183002	0.0000	I(1)
lnCOR	-0.381861	-4.205004	-3.526609	-3.194611	0.9850	NS	-12.54731	-4.205004	-3.526609	-3.194611	0.0000	I(1)

Source: Author's computation using E-view 10 (2021)
NS: Not stationary

TABLE 4.2 Result of the Phillip and Perron (PP) Test

Phillips-Perron (PP) Test with Intercept only

Variable	Level						1st difference					
	Test statistic	Critical values			P-values	Remarks	Test Statistic	Critical Values			P-values	Remarks
		1%	5%	10%				1%	5%	10%		
lnRGDP	-5.709557	-3.568308	-2.921175	-2.598551	0.0000	NS	-11.79116	-3.57131	-2.922449	-2.599224	0.0000	I(1)
lnINQ	-0.182142	-3.568308	-2.921175	-2.598551	0.9338	NS	-25.12328	-3.57131	-2.922449	-2.599224	0.0001	I(1)
lnPOV	-3.83587	-3.568308	-2.921175	-2.598551	0.0040	I(0)	-8.748436	-3.57131	-2.922449	-2.599224	0.0000	I(1)
lnPCI	-1.265866	-3.568308	-2.921175	-2.598551	0.6383	NS	-5.279447	-3.57131	-2.922449	-2.599224	0.0010	I(1)
lnUNP	-1.181906	-3.568308	-2.921175	-2.598551	0.3673	NS	-3.901132	-3.57131	-2.922449	-2.599224	0.0040	I(1)
lnINF	-3.320563	-3.568308	-2.921175	-2.598551	0.0191	I(0)	-15.12183	-3.57131	-2.922449	-2.599224	0.0000	I(1)
lnPEXED	-0.512296	-3.568308	-2.921175	-2.598551	0.8799	NS	-7.912258	-3.57131	-2.922449	-2.599224	0.0000	I(1)
lnPOP	-2.815409	-3.568308	-2.921175	-2.598551	0.0633	NS	-2.895775	-3.57131	-2.922449	-2.599224	0.1007	NS
lnCOR	-1.60819	-3.568308	-2.921175	-2.598551	0.4710	NS	-12.7192	-3.57131	-2.922449	-2.599224	0.0000	I(1)

Phillips-Perron (PP) Test with Trend and Intercept

Variable	Level						1st difference					
	Test statistic	Critical values			P-values	Remarks	Test Statistic	Critical Values			P-values	Remarks
		1%	5%	10%				1%	5%	10%		
lnRGDP	-5.717426	-4.152511	-3.502373	-3.180699	0.0001	I(0)	-11.7755	-4.156734	-3.50433	-3.181836	0.0000	NS
lnINQ	-6.56977	-4.152511	-3.502373	-3.180699	0.0000	I(0)	-24.77055	-4.156734	-3.50433	-3.181836	0.0000	I(1)
lnPOV	-3.786605	-4.152511	-3.502373	-3.180699	0.0250	I(0)	-8.760288	-4.156734	-3.50433	-3.181826	0.0000	I(1)
lnPCI	-1.475969	-4.152511	-3.502373	-3.180699	0.8248	I(0)	-5.246042	-4.156734	-3.50433	-3.131826	0.0004	I(1)
lnUNP	-3.159915	-4.152511	-3.502373	-3.180699	0.1043	NS	-3.563476	-4156734	-3.50433	-3.181826	0.0438	I(1)
lnINF	-3.314247	-4.152511	-3.502373	-3.180699	0.0757	NS	-15.35746	-4156734	-3.50433	-3.181826	0.0000	I(1)
lnPEXED	-2.289703	-4.152511	-3.502373	-3.180699	0.4135	NS	-7.94886	-4156734	-3.50433	-3.181826	0.0000	I(1)
lnPOP	-2.780527	-4.152511	-3.502373	-3.180699	0.2110	NS	-2.571922	-4156734	-3.50433	-3.181826	0.2943	NS
lnCOR	-5.407091	-4.152511	-3.502373	-3.180699	0.0003	I(0)	-12.88222	-4156734	-3.50433	-3.181826	0.0000	I(1)

Source: Author's computation using E-view 10 (2021)

NS: Not stattionary

4.2.2 Lag Length Selection Criteria Results

Having ascertained the order of integration of the series, the optimal lag length incorporated in the models were determined. This was undertaken to avoid misspecification and loss of the degrees of freedom. This decision is based democratically from the VAR lag order selection criteria attributed to Hannan-Quinn information criteria (HQ), Final Prediction Error (FPE), Log Likelihood (LL), Akaike information criteria (AIC) and Schwarz Information Criteria (SC).

As shown in the tables below, the result shows that all selection criteria selected the optimum lag length of (2) for ARDL model (10), thus, lag length of (2) which will be used. For the ARDL model (11), all selection criteria selected the optimum lag length of (1), thus lag length of (1) will be used. For the ARDL model (12), all selection criteria selected the optimum lag length of (1), thus, lag length of (1) will be used. Therefore, the lag length chosen for models 10,11 and 12 are (2),(1) and (1) respectively.

Table 4.3: Results of Optimal VAR Lag Selection for Objective 1

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-88.11923	NA	3.08e-05	3.800785	3.993828	3.874025
1	115.1276	356.7189	2.14e-08	-3.474595	-2.316338	-3.035154
2	190.6577	117.1487*	2.82e-09*	-5.537047*	-3.413576*	-4.731405*

Source: Author's computation using E-view 10 (2021)

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Table 4.4: Result of Optimal VAR Lag selection for Objective 2

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1177.604	NA	6.32e+14	48.26956	48.46261	48.34280
1	-999.8847	311.9161*	1.25e+12*	42.03611*	43.19437*	42.47555*
2	-988.6307	17.45521	2.26e+12	42.59717	44.72064	43.40281

Source: Author's computation using E-view 10 (2021)

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Table 4.5: Results of Optimal VAR Lag selection for Objective 3

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1245.614	NA	1.01e+16	51.04546	51.23850	51.11870
1	-1002.480	426.7244*	1.39e+12*	42.14204*	43.30030*	42.58148*
2	-984.5634	27.78913	1.91e+12	42.43116	44.55463	43.23680

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1245.614	NA	1.01e+16	51.04546	51.23850	51.11870
1	-1002.480	426.7244*	1.39e+12*	42.14204*	43.30030*	42.58148*
2	-984.5634	27.78913	1.91e+12	42.43116	44.55463	43.23680

Source: Author's computation using E-view 10 (2021)

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

4.2.3 Cointegration Test Results

Having ascertained the optimal lag length, the co-integration relationship among the variables is determined. To this end, the study applied the bounds test procedure approach. Due to the limitations of the conventional Wald-test statistics, Pesaran and Shin (1995,1998) suggested two critical values (lower and upper bound) to examine the relationship. If the computed F-statistic is lower than the lower bound I(0), the null is rejected but if the computed F-statistic is greater than the upper bound I(0) it denotes that there exists a long run relationship among the variables. Also, The null hypothesis of no cointegration is rejected when the value of the test statistic exceeds the upper critical bound value, while its is accepted if the F-statistic is lower than the lower bound value. However, if the F-statistic lies between the lower bound and upper bound, the cointegration is inconclusive.

The results of the bound test is shown in tables 4.6, 4.7 and 4.8 respectively, at 5 percent level of significance the study rejects the null hypothesis of no long run relationship among the examined variables is in objective one, the F-statistic (9.596342) is greater than the upper bound value (4.01) at 5 percent level of significance. Similarly, in objective two, the F-statistic (16.5850) is greater than the upper bound value (4.01), a similar result was computed for objective three, the the F-statistics (4.604620) is greater than the upper bound value (4.01). This empirical evidence rules out the possibility of estimated relationship being false.

Table 4.6

Results of Bound Test to Cointegration for Objective One			
Significance	Critical Value Bonds		Computed F-Statistic
	Lower Bound I(0)	Upper Bond I(1)	**9.596342**
10%	2.45	3.52	
5%	2.86	4.01	
2.5%	3.25	4.49	
1%	3.74	5.06	

Source: Author's Computation using E-view 10 (2021)

Table 4.7

Results of Bound Test to Cointegration for Objective two			
Significance	Critical Value Bonds		Computed F-Statistic
	Lower Bound I(0)	Upper Bond I(1)	**16.5850**
10%	2.45	3.52	
5%	2.86	4.01	
2.5%	3.25	4.49	
1%	3.74	5.06	

Source: Author's Computation using E-view 10 (2021)

Table 4.8

Results of Bound Test to Cointegration for Objective three			
Significance	Critical Value Bonds		Computed F-Statistic
	Lower Bound I(0)	Upper Bond I(1)	**4.604620**
10%	2.45	3.52	
5%	2.86	4.01	
2.5%	3.25	4.49	
1%	3.74	5.06	
Significance	Critical Value Bonds		Computed F-Statistic
	Lower Bound I(0)	Upper Bond I(1)	**4.604620**
10%	2.45	3.52	
5%	2.86	4.01	
2.5%	3.25	4.49	
1%	3.74	5.06	

Source: Author's Computation using E-view 10 (2021)

4.4 Empirical Results of the Impact of Inequality on Growth

4.4.1 Long Run Impact of Inequality on Growth

Table 4.9 below present the estimated long run impact of inequality on economic growth. The long run coefficient of inequality portrayed a negative but statistically insignificant relationship with economic growth. As can be observed, a one percent increase in inequality will lead to a decrease of 0.296226 percent in economic growth. It conforms the apriori expectations indicating that lower the level of inequality in an economy, the higher the economic growth. Therefore, the implication of the above result indicates that income inequality is not a significant determinant of Nigeria's economic growth. This results is also similar with the findings of Akande (2012).

The coefficient of population from the previous year depicts an insignificant negative relationship between population of previous year and economic growth of present year. This implies that an increase of a unit percent in population of previous year will lead to 18.56772 percent decrease in economic growth of present year. One possible reason is that, higher population will decrease the standard of living of citizens resulting from high rate of less productive force and unavailability of resources for the increased population. However, this results contradicts the work of Stephen (2017) and Adewole (2012).

Similarly, public expenditure on education coefficient shows a negative but statistically insignificant relationship with economic growth from. Hence, a unit increase in public expenditure on education results in about 0.746099 decrease in economic growth,

ceteris paribus. The behaviour of the variable is contrary to a priori expectation but identical to the work of Anene (2017).

The result reflects a negative but statistically insignificant relationship between corruption and economic growth. The coefficient of corruption (-1.299725) denotes that one percent increase in corruption will bring about 1.299725 decrease in economic growth, holding other things constant. It means the increase in corruption aggravates economic growth and that it may be too problematic. It shows that the ill-gotten wealth from corrupt practices were confined into the hands of perpetrator and were not likely invested, such that the poor could not benefit from the gains, hence it worsens the state of growth. This work however is identical to the work of Nwankwo (2014).

The coefficient of GDP for the previous year is negative and statistically significant indicating that, holding other things constant, a unit increase in the GDP of previous year will decrease economic growth of present year by 10.109033 percent. This result contradicts the findings of Babatunde and Olasode (2016).

Furthermore, the result shows population has a positive but insignificant relationship with economic growth. In other words, all other things being equal, a one percent in population will cause a 12.551457 percent increase in economic growth. This could be explained by the fact that quantity of population is increasing without adding an increase in the quality in order to boost economic growth significantly. However, the result is consistent with the findings of Dao (2012) and Guga (2015) and it contradicts the work of Adewole, (2012).

The R^2, the adjusted R^2, the F-statistic and the Durbin-Watson statistic for the selected model is shown in the panel B of the table 4.9. As observed from the result presented, the explanatory power (R^2) of the model is low (0.397397) In essence, the proportion of variation in economic growth measured by real GDP that is jointly explained by inequality, population, public expenditure and corruption is about 39% while 61% of the changes in real GDP can be attributed to other factors not included in the regression equation.

The Adjusted R^2 that is the proportion of variation in economic growth measured by real GDP that is jointly explained by the explanatory variables after the effect of insignificant repressor has been removed is about 27% while the other 73% was unaccounted for.

The F-statistic which is used to measure the overall significance of the estimated model is significant at 3.214906 with probability value p = 0.006687. Indeed, there is a re-enforcement of the goodness of fit. This suggests that the rate of natural increase in are inequality, population, public expenditure and corruption are insignificant determinants of economic growth in Nigeria.

Besides, the Durbin-Watson statistic which is to test for autocorrelation of residuals in the model, in particular, the first order autocorrelation indicates the absence of serial autocorrelation at 2.015349.

4.4.2 Short Run Impact of Inequality on Growth

Table 4.10 below present the estimated short run impact of inequality on economic growth. As can be observed, it is evident that the coefficient of the error correction term for the estimated equation is negative and statistically insignificant. In essence, the speed

adjustment implied by the correction term suggests that the deviation from short run to long run is corrected by 0.52180 percent per each year. Therefore there is no stable long run relationship among GDP, inequality, population, public expenditure on education and population. Similarly, the estimated short run model revealed that it is similar to its insignificant long run.

Precisely, the coefficient of inequality depicts a negative but insignificant relationship with economic growth similar to its insignificant short run. Holding other things constant, a one percent increase in inequality will lead to a decrease of 0.198925 percent in economic growth. This results is also similar with the findings of Akande (2012).

Similarly, the coefficient of population from previous years depicts an insignificant relationship with economic growth. This implies that an increase of one percent in population from previous years will lead to a decrease of 13.52554 percent in economic growth. Higher population will decrease the standard of living of citizens resulting from high rate of less productive force and unavailability of resources for the increased population, contrary to the findings of Alimi and Fagbohun (2021).

The coefficient of public expenditure on education from previous years depicts a positive and insignificant relationship with economic growth. However, the estimated short run model revealed that it is different to its insignificant long run. The fact that it is not significant opines that government have not inserted enough efforts since expenditure is one of the fundamentals of sustainable development. Hence, a unit increase in public expenditure

on education results in 4.330103 increase in economic growth, contrary to the findings of Anene (2017).

Lastly, the impact of corruption on economic growth is negative and statistically insignificant which is similar to its estimated long run. Holding other things constant, a one percent increase in corruption will lead to 0.240383 decrease in economic growth. However, this results is identical to the work of Nwankwo (2014).

Table 4.9 Estimated Long Run Impact of inequality on Growth

Regressand: DLNRGDP				
Panel A: Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	66.89503	15.2996	0.533881	0.5965
GDP(-1)	-1.047607	0.152494	-6.869804	0.0000
INQ	-0.296226	0.380922	-0.777654	0.4415
POP(-1)	-18.56572	53.72494	-2.020769	0.0502
PEXED	-0.746099	2.063130	-0.361634	0.7196
COR	-1.299725	76.98342	-0.016883	0.9866
D(GDP(-1))	-10.109033	0.175563	-0.751166	0.0457
D(POP)	12.551457	4.787534	-0.784155	0.0822
Panel B: Goodness-of-fit Measures				
R^2		0.397397		
Adjusted R^2		0.273786		
F-statistic		3.214906		
Prob(F-statistic)		0.006687		
Durbin-Watson stat		2.015349		

Source: Author's computation using E-view 10 (2021)

Table 4.10: Estimated Short Run Impact of Inequality on Growth

Regressand: DLNRGDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-0.154635	1.368224	-0.113019	0.9106
D(GDP(-1))	-0.308947	0.221011	-1.397788	0.1759
D(GDP(-2))	-0.223398	0.156956	-1.423320	0.1707
D(INQ(-1))	0.820023	0.806560	1.016692	0.1633
D(INQ(-2))	-0.198925	0.864601	-0.230077	0.3161
D(POP(-1))	15.08389	19.61247	-0.811139	0.8193
D(POP(-2))	-13.52554	20.36034	-0.665636	0.4226
D(PEXED(-1))	1.463015	2.520043	0.550010	0.5099
D(PEXED(-2))	4.330103	2.659979	1.718277	0.5857
D(COR(-1))	1.968212	9.648394	0.020508	0.0983
D(COR(-2))	-0.240383	9.574432	-0.002491	0.9980
ECT(-1)	-0.528168	0.263183	-2.006849	0.0523

Source: Author's Computation using E-view 10 (2021)

4.5 Empirical Results on the Effect of Poverty on Growth

4.5.1 Long Run Effect of Poverty on Growth

Table 4.11 below depicts the numerical estimates of the long run effect of poverty on growth. As can be seen, poverty has a negative but statistically insignificant relationship with economic growth. Hence, a one percent increase in poverty will decrease economic growth by 0.044477 percent. It conforms the apriori expectations indicating that lower the level of poverty in an economy, the higher the economic growth. However, this result is aligned with the work of Chinonye (2015).

Moreover, the results shows that unemployment has positive and statistically significant relationship with economic growth, meaning that it may aggravate the level of economic growth in Nigeria. This is revealed from its coefficient, hence a unit increase in unemployment in the previous year will bring about 0.374092 increase in economic growth of present year, holding other things constant. It indicates that unemployment is a key determinant of economic growth and could enhance economic growth in Nigeria. However, this study is identical with the work of Omoniyi (2018).

Similarly, the coefficient of per capita income from the previous year depicts an insignificant positive relationship between per capita income of previous year and economic growth of present year. Hence, an increase in one percent in per capita income of previous year will lead to an increase of 1.06E-06 percent in economic growth of present year. This corroborates the apriori expectation indicating that the higher the per capita income the

higher the increase in the level of economic growth. However, this result is contrary to the findings of Joseph (2012).

Inflation has a negative but statistically insignificant relationship with economic growth as revealed from its coefficient. Holding other things constant, from a one percent increase in inflation will bring about -0.013304 decrease in economic growth. This results depicts that the rate of inflation in terms of increases in price would create unavailability to affordable resources needed for individuals hereby decreasing the standard of living. However, this results contradicts the work of Omoniyi (2018).

The R^2, the adjusted R^2, the F-statistic and the Durbin-Watson statistic for the selected model is shown in the panel B of the table 4.10. As observed from the result presented, the explanatory power (R^2) of the model is high (0.916880). In essence, the proportion of variation in economic growth measured by real GDP that is jointly explained by poverty, unemployment, per capita income and inflation is about 91%.

The Adjusted R^2 that is the proportion of variation in economic growth measured by real GDP that is jointly explained by the explanatory variables after the effect of significant repressor has been removed is about 90% while the other 10% was unaccounted for.

Furthermore, the F-statistic which is used to measure the overall significance of the estimated model is significant at 66.18480 with probability value p = 0.000000. It shows that there is a re-enforcement of the goodness of fit. These suggest that the rate of natural increase in poverty, unemployment, per capita income and inflation are significant determinants of poverty in Nigeria.

Lastly, the Durbin-Watson statistic which is to test for autocorrelation of residuals in the model, in particular, the first order autocorrelation indicates the absence of serial autocorrelation at 1.654379.

4.5.2 Short Run Effect of Poverty on Growth

The results in table 4.12 below present the estimated short run effect of poverty on economic growth. As can be observed, it is evident that the coefficient of the error correction term for the estimated equation is negative and statistically insignificant. In essence, the speed adjustment implied by the correction term suggests that the deviation from short run to long run is corrected by -0.459730 percent per each year. Therefore, there is no stable long run relationship among GDP, poverty, unemployment, per capita income and inflation. Similarly, the estimated short run model revealed that it is similar to its insignificant long run.

Precisely, the results depicts that poverty has a negative and insignificant relationship with economic growth, hereby confirming the apriori expectation. Hence, a one percent increase in poverty rate will lead to a decrease of 0.304720 percent in economic growth. Implying that, increase in poverty would lead to reduction of economic growth in Nigeria. This results is identical with the work of Chinonye (2015).

While the coefficient of unemployment of the previous year depicts a negative insignificant relationship with economic growth. However, the estimated short run model revealed that it is different to its insignificant long run. The estimated long run shows a positive significant relationship while the short run resulted in a negative insignificant relationship. This implies that an increase of one percent in unemployment from previous years will lead to a decrease of 0.219199 percent in economic growth, contrary to the findings of Omoniyi (2018).

Similarly, the coefficient of per capita income from previous year depicts a negative and insignificant relationship with economic growth. As observed, the estimated short run model revealed that it is different to its insignificant long run. This infirm the apriori expectation that as per capita increases, economic growth increases. Holding other things constant, a unit increase in per capita income results in 0.000149 decrease in economic growth, contrary to the findings of Akinci (2017).

Lastly from the table, the impact of inflation on economic growth from previous year is positive but statistically insignificant. Holding other things constant, a one percent increase in inflation will lead to 0.44573 increase in economic growth. However, the estimated short run model revealed that it is different to its insignificant long run and also infirms the apriori expectation, contrary to the result of Nwankwo (2014).

Table 4.11: Estimated Long Run Effect of poverty on Growth

Regressand: DLNRGDP				
Panel A: Long Run Coefficients				
Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	-1.246356	3.955890	0.315063	0.7543
GDP(-1)	-0.944787	0.043229	-21.85523	0.0000
POV	-0.044477	0.100734	-0.441531	0.6611
UNP(-1)	0.374092	0.127084	2.943652	0.0053
PCI(-1)	1.06E-06	4.87E-06	0.217742	0.8287
INF	-0.013304	0.017582	-0.756677	0.4535
Panel B: Goodness-of-fit Measures				
R^2	0.916880			
Adjusted R^2	0.903027			
F-statistic	66.18480			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	1.654379			

Source: Author's computation using E-view 10 (2021)

Table 4.12: Estimated Short Run Effect of Poverty on Growth

Regressand: DLNRGDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-0.65080	0.819598	0.083065	0.9342
D(GDP(-1))	-0.001546	0.148418	-0.010419	0.9917
D(POV(-1)	-0.304720	0.309244	-0.985370	0.3301
D(UNP(-1)	-0.219199	0.954867	-0.229560	0.8195
D(PCI(-1))	-0.000149	8.24E-05	-1.808769	0.0776
D(INF(-1))	0.044573	0.056869	-0.783790	0.4376
ECT(-1)	-0.459730	0.273228	-1.682585	0.0999

Source: Author's Computation using E-view 10 (2021)

4.6 Empirical Results on the Impact of Inequality on the Effect of Growth on Poverty

4.6.1 Long Run Impact of Inequality on the Effect of Growth on Poverty

Tables 4.13 and 4.14 below present the results of the estimated long run impact of inequality on the effect of growth on poverty. The long run coefficient depicts that inequality has a negative and statistically significant relationship with poverty. Holding other factors constant, a one percent increase in inequality will result in 0.093339 percent decrease in poverty. However, this result is consistent with the findings of Yaqub (2015).

Furthermore, the results reflects a negative but statistically insignificant relationship between economic growth and poverty indicating that a one percent increase in economic growth will cause 0.410154 decrease in poverty. It means, economic growth could lead to a reduction of poverty in Nigeria. The behaviour of the variable is contrary to a priori expectation but proved to be a determinant of poverty. This results contradicts the works of Bakare and Ilemobayo (2013).

Similarly, per capita income has a negative but statistically insignificant relationship with poverty, hence a unit increase in per capita income in the previous year, results in 4.54E-06 decrease in poverty rate in the current year. This corroborates the apriori expectation indicating that the increase in the level of per capita income which is the income per head of individuals decreases poverty rate in the economy. However, this study contradict the works of Bashir and Jameelah (2015).

Finally, the table depicts inflation has a negative and insignificant relationship with poverty. However, holding other factors constant, a unit increase in inflation will result in

0.019313 decrease in poverty. This is not usual, because the rate of inflation in terms of high increases in price would increase the plight of the poor. However, this result is identical to the work of Anthony, 2020 and contradicts the work of Omoniyi (2018).

The R^2, the adjusted R^2, the F-statistic and the Durbin-Watson statistic for the selected model is shown in the panel B of the table 4.13 and 4.14 respectively. As observed from the result, the explanatory power (R^2) of the model is high (0.611346). In essence, the proportion of variation in economic growth measured by real GDP that is jointly explained by inequality, population, public expenditure and corruption is about 61%.

The Adjusted R^2 that is the proportion of variation in economic growth measured by real GDP that is jointly explained by the explanatory variables after the effect of insignificant repressor has been removed is about 50% while the remaining 50% was not accounted for..

Furthermore, the F-statistic which is used to measure the overall significance of the estimated model is significant at 5.820034 with probability value p = 0.000033. Indicating a re-enforcement of the goodness of fit.

Lastly, the Durbin-Watson statistic which is to test for autocorrelation of residuals in the model, in particular, the first order autocorrelation indicates the absence of serial autocorrelation at 2.221659.

4.6.2 Short Run Impact of Inequality on the Effect of Growth on Poverty

The results in table 4.15 and 4.16 below present the estimated short run impact of inequality on the effect of growth on poverty. As can be observed, it is evident that the coefficient of the error correction term for the estimated equation is positive but statistically insignificant. In essence, the speed adjustment implied by the correction term suggests that the deviation from short run to long run is corrected by 0.218888 percent per each year. Therefore, there is stable long run relationship among poverty, GDP, inequality, per capita income and inflation.

Inequality has a positive insignificant relationship with poverty from the previous years as revealed from the coefficient. However, this is not the case in the long run which portrayed a negative insignificant with poverty. Therefore, a unit increase inequality will cause 0.012733 percent increase in poverty rate, ceteris paribus. This result is contrary with the results of Nurrudeen (2012).

Furthermore, the results depicts an insignificant negative relationship between economic growth and poverty from previous years. Hence, a one percent increase in economic growth will lead to a decrease of 0.035784 percent in poverty. Implying that, economic growth could lead to reduction of poverty rate in Nigeria. This is not common, because it does not conform to reality but it may have resulted from the addition of other variables been used in the model. However this result is similar to the findings of Ijaiya (2015).

Per capita income has an insignificant relationship with poverty. The estimated short run model revealed that it is similar to its insignificant long run. This implies that an

increase of one percent in per capita income from previous years will lead to a decrease of 6.83E-05 percent in poverty, holding other factors constant, contrary to the findings of Omoniyi (2018).

Lastly, inflation reflects a negative insignificant relationship with poverty from previous years. Holding other things constant, a one percent increase in inflation will lead to 0.033625 decrease in poverty. However, the estimated short run model revealed that it is similar to its insignificant long run and also infirms the apriori expectation. This result is contrary to the result of Nwankwo (2014).

Table 4.13: Estimated Long Run Impact of Inequality on the Effect of Growth on Poverty

Regressand: DLNRPOV				
Panel A: Long Run Coefficients				
Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	26.44247	6.460035	4.093239	0.0002
POV(-1)	-0.453569	0.121393	-3.736360	0.0006
INQ	-0.093339	0.039266	-2.377131	0.0227
GDP	-0.410154	0.140846	-2.912063	0.0061
PCI(-1)	-4.54E-06	5.64E-06	-0.806556	0.4251
INF	-0.019313	0.019355	-0.997854	0.3248
Panel B: Goodness-of-fit Measures				
R^2		0.611346		
Adjusted R^2		0.506304		
F-statistic		5.820034		
Prob(F-statistic)		0.000033		
Durbin-Watson stat		2.221659		

Source: Author's computation using E-view 10 (2021)

Table 4.14: Estimated Long Run Impact of Inequality on the Effect of Growth on Poverty

Regressand: DLNRPOV				
Panel A: Long Run Coefficients				
Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	26.44247	6.460035	4.093239	0.0002
POV(-1)	-0.453569	0.121393	-3.736360	0.0006
GDP	-0.410154	0.140846	-2.912063	0.0061
INQ	-0.093339	0.039266	-2.377131	0.0227
PCI(-1)	-4.54E-06	5.64E-06	-0.806556	0.4251
INF	-0.019313	0.019355	-0.997854	0.3248
Panel B: Goodness-of-fit Measures				
R^2		0.611346		
Adjusted R^2		0.506304		
F-statistic		5.820034		
Prob(F-statistic)		0.000033		
Durbin-Watson stat		2.221659		

Source: Author's computation using E-view 10 (2021)

Table 4.15: Estimated Short Run Impact of Inequality on the Effect of Growth on Poverty

Regressand : DLNRPOV				
Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-0.111947	0.478993	0.233713	0.8163
D(POV(-1))	-0.301661	0.180583	-1.670487	0.1023
D(GDP(-1)	-0.035784	0.072281	-0.495070	0.6231
D(INQ(-1)	0.012733	0.431664	0.029497	0.9766
D(PCI(-1))	-6.83E-05	4.04E-05	-1.691819	0.0981
D(INF(-1))	-0.033625	0.028236	-1.190843	0.2404
ECT(-1)	0.218888	0.133561	1.638864	0.1087

Source: Author's Computation using E-view 10 (2021)

Table 4.16: Estimated Short Run Impact of Inequality on the Effect of Growth on Poverty

Regressand : DLNRPOV				
Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-0.111947	0.478993	0.233713	0.8163
D(POV(-1))	-0.301661	0.180583	-1.670487	0.1023
D(INQ(-1)	0.012733	0.431664	0.029497	0.9766
D(GDP(-1)	-0.035784	0.072281	-0.495070	0.6231
D(PCI(-1))	-6.83E-05	4.04E-05	-1.691819	0.0981
D(INF(-1))	-0.033625	0.028236	-1.190843	0.2404
ECT(-1)	0.218888	0.133561	1.638864	0.1087

Source: Author's Computation using E-view 10 (2021)

4.6 Discussion of Results

The broad objective is to examine the relationship among inequality, poverty and economic growth. The three specific objectives includes the impact of income inequality on economic growth, the effect of poverty on economic growth and the impact of inequality on the effect of economic growth on poverty which have been accomplished through econometric analytical methods.

The analysis of the impact of income inequality on economic growth in Nigeria suggest that inequality has a negative but insignificant effect on economic growth both in the long run and short run periods. A percent increase in inequality will cut economic growth by 0.296226 percent in economic growth, ceteris paribus. All variables used for the objective appears to have a negative insignificant relationship with economic growth in the long run while public expenditure on education appears to be only the variable to have a positive insignificant relationship while other variables has a negative insignificant relationship with economic growth. This results is compatible with the findings of Akande (2012).

The effect of poverty on economic growth analysis portrayed a negative but insignificant relationship with economic growth. Thus, in the long run, one percent increase in inequality reduces economic growth by 0.0444477 percent, holding other things constant. Unemployment and per capita income reflects a positive significant and insignificant relationship with economic growth respectively while the other variables depicts a negative insignificant relationship in the long run. Also, inflation appears to be the only variable to have a positive but insignificant relationship while the remaining variables depicts a negative

insignificant relationship with economic growth. This finding is similar to the results of Chinonye (2015).

Lastly, the impact of inequality on the effect of growth on poverty was analysed. As can be observed in the long run, all the variables have a negative effect with poverty, including economic growth and inequality. As shown in the short run, only inequality has a positive insignificant effect on poverty while the other variables exhibits a negative insignificant effect on poverty. Therefore, the implication of the above results indicates that income inequality and poverty are not significant determinants of Nigeria's economic growth. However, certain variables that have positive significant effect on economic growth are needed to be prioritized to achieve the economy's objectives. This results is similar to the findings of Bakare and Ilemobayo (2013).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECONMMENDATIONS

5.1 Introduction

This chapter is divided into five sections. Section 5.2 presents the summary of the findings. Section 5.3 reveals the conclusion of the study. Section 5.4 contains the recommendations to be undertaken, while section 4.5 presents the limitations encountered while undertaking the research.

5.2 Summary of the findings

The main aim of this study was to examine the relationship between income inequality, poverty, and economic growth in Nigeria from 1970 to 2020. The impact of income inequality on Nigeria's economic growth has been examined precisely. The study also examined the effect of poverty on Nigeria's economic growth. Finally, the impact of income inequality on the effect of Nigeria's economic growth on poverty was analysed. The necessary background to the research was laid to accomplish these objectives, the issues were recognized and justified accordingly.

The study employed econometric techniques of analysis. The specified objectives was achieved using the Auto Regressive Distributed Lag Model (ADRL). Before the ARDL test was conducted, the unit root test was estimated to determine the time series of the variables included in the research using both Augmented Dickey Fuller and the Phillip and Perron (PP). The results of the ADF and PP revealed the variables that were not stationary in level form, leading to first difference test. After the variables had been determined to be stationary at level or first difference. The ARDL models lag order was predicted using VAR lag order

selection criteria that chose lag 2, 1, and 1 for models 11, 12 and 13 respectively. Furthermore, the cointegration relationship between the variables was determined in each ARDL model using the bound test after the lag length was selected, portraying that a long term connection exists between the variables. The research then proceeded to access the long term and short term connection between the variables using ARDL. Results of the examination, therefore, reveals an insignificant negative relationship between income inequality, poverty and economic growth.

5.3 Conclusion

This study aims to investigate the nature of the relationship between the three income inequality, poverty and economic growth. According to several studies, it is expected that there will be a positive and significant relationship between the variables. Contrary to this, the conclusion of this research holds that a negative and insignificant relationship exists between the variables portraying that as income inequality and poverty increases, economic growth decreases. By implication, as the economy grows, the gap between the wealthy and the poor widens even though there is a slight improvement in number of people living below poverty rate. It means that growth is not inclusive as considerably larger rate of it is captured by those in the higher cadre of subgroups of the population. The findings further indicates that population, corruption, public expenditure on education, inflation has an adverse and insignificant connection to Nigeria's economic growth. Oppositely, the research discovered that per capita income and unemployment has a positive significant and insignificant connection to Nigeria's economic growth respectively.

5.4 Recommendations

From the findings and results of this study, some possible solutions that might help reduce inequality and poverty are proffered. Policies aimed at reducing inequality should be complemented with policies that will ensure growth and poverty reduction. It is recommended that for the economy to experience growth, inequality must be addressed as it will simultaneously reduce poverty. Furthermore, other variables used in the research should be examined as it has its individual significance on economic growth.

The Nigerian government should make effort to implement policies and schemes that will improve education system especially in the rural parts of the country. The authority should pursue expansionary economic regulations that are specially centered to educational schemes and tasks in addition, there have to be right tracking method to make sure that budget are no longer being misused and misallocated with the aid of using authorities officers. Corruption has been a primary issue in Nigeria and until policies and schemes are used to tackle it, it might never be actualized. Most of inequality in Nigeria is greater seen in rural regions and locations with low economic welfare. Therefore, the authorities should empower individuals in rural areas with the aid of using investment initiatives, constructing infrastructure and creating productive activities that can help generate income and live a better life.

The central bank of Nigeria is likewise counseled to pursue stable macroeconomic policies that will increase growth and lower inflation. The outcome from this research suggests that higher inflation reduces the real wages of workers, particularly for low income

earners. Unavoidably, this decreases their standard of living and further widens the gap between the wealthy and the poor. Also, government should boost effective spending on education and public health facilities, and programmes mainly meant for the non-privileged children, women and the poor in general. A healthy population implies a wealthy nation. If the population is healthy and educated, there would be larger capacity for development and productivity which could cause more growth with reduction in the levels of poverty and inequality in the country.

5.5 Limitations of the study

The study was not decisive enough as some of the other factors influencing economic growth were not included but solely focused on inequality and poverty as the primary variables influencing the economy which were shown to be irrelevant after the outcome of the results. Also, restriction of time and collection of data were core factors to the limitations as there were not enough adequate data to be used for the variables with respect to the period of time to be used in the research. However, these limitations do not diminish the relevance of the study.

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