Population Growth and Unemployment Nexus in Nigeria

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Certification

This is to certify that Mojere Adegbite, Valk-Kenneth with Matriculation Number LCU/PG/001116 carried out this research work titled"Population growth and Unemployment Nexus in Nigeria" in the Department of Economics, Faculty of Management and Social Sciences, Lead City University, Ibadan, Oyo State Nigeria, for the award of Masters Degree(M.Sc) in Economics and that this has not been previously submitted.

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Dedication

This Project work is dedicated to the Almighty God, the one who gives me hope and courage at all times.

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Abstract

This study investigated the nature and extent of the relationship between the population growth and unemployment level in Nigeria between 1981 and 2020. The specific objectives of the study were to investigate the causal relationship between the growth in population and unemployment in Nigeria; and to analyze the response of Unemployment to shocks in population growth in Nigeria. This was motivated by the high rate of unemployment level in Nigeria because the optimal proportion of the country's labour force can not be absorbed by the prevailing economic condition of the country. To be able to address this problem, a thorough understanding of the dynamic and interplay between population and unemployment is highly required. Time series data for the analysis were sourced from world development index (WDI). The data were subjected to preliminary analysis which include the trends, descriptive statistics and correlation analysis of the variables for empirical analysis and the Augmented Dickey Fuller (ADF) stationary test. The two objectives were examined using Toda-Yamamoto (TY) causality test, because the variables included were observed to be a mixture of I(0) and I(1), the impulse response (IR) and the variance decomposition analysis (VDA). The result of revealed that there was no direct causality between population growth and unemployment rate in Nigeria. However it can cause unemployment through output growth. It was further discovered that, shocks in unemployment account for most of the variations in itself in he short run while in the long run, population growth and other variables combined are the major contributor to the variations in unemployment rate in Nigeria. It was concluded that population growth have significant impact in the long run. Based on this, it was recommended that concerted effort should be made by the government, individuals and agencies to check and stabilize population growth and provide infrastructural facilities including education and channel the growing population into productive sectors of the economy in order to enable them to make meaningful contribution to the economic growth and development of the country.

Keywords: Population growth , Unemployment rate, Dependency ratio.

Word Count: 299

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Chapter One

Introduction

1.1 Background of the Study

The impact of the growing trend of population remains one of the major issues that is considered central to every economy. Generally, the belief is that population and development are interconnected, such that the former helps spur the latter. To be precise, the level of development is consequent upon the prevailing population growth trend. However, enough shreds of evidence show and suggest that economies characterized by rapid growing populations, without concomitant growth in the capacity utilization are affected by the worst manifestations of underdevelopment[1].This scenario helps to explain the cause of underdevelopment among the under-developing economies and Nigeria specially.

Since independence till date, the population of Nigeria as one of the Least Developed Countries(LDCS) has been on the increasing side. All the population census (1964, 1991, and 2006 correspondingly) conducted thus far, helped emphasized that the country is ever heading towards rapid growth of the population[2]. At present, Nigeria as Africa's largest population and the world's 10th largest population[3]. The Nigerian population, like all other nation across the world, is related to three factors: fertility, migration, and mortality. Observably, Nigeria's increase increases at the rate of 3.2% indicating a period of twenty-two years to double, which suggests that the country is growing at a geometrical progression[1]. The Nigerian population and developmentreported that with an annual growth rate of 3.2 per cent, the Nigerian population is estimated to be 192 million, which is said to be largely due to the high fertility caused by the low use of contraceptives; such that the actual contraceptive prevalence rate (CPR) is around 15.5 percent[2].

In a recent study, it had been further reported that based on estimation, a mean Nigerian woman gives birth to at least 6 children in her lifetime unlike an educated Nigerian woman gives birth to a lower number of 3 children[1]. Thus, from the analysis of the last census and reports, it's clear that from 1964 (the first population census after independence) to today, the Nigerian population has grown rapidly at a high rate of 250 percent[4]. This makes balancing the increase rate and development of the country somehow troublesome. the matter with this is the need of the country's economy to expand proportionately as well, in order that the increased population can cope and handle it. The low deathrate of 14 per 1,000 reduced infant deathrate and higher life expectancy is an issue because it shows a higher chance of survival[1,5].

The literature has found that the main determinants of rapid population growth rate are fertility rate, birth rate, deathrate and immigration. Similarly, the youth dependence ratio; children under the age of 15 have been described as one of the leading causes of population growth with a high prevalence in developing countries. These set of variables in Nigeria were compared with that of some developed countries such as France, Germany, the united kingdom and the united states of America from 2000 to 2018. From the data gathered from the world development indicators, the birth rate in Nigeria is three times higher than what is obtainable in these countries and the death rate is twice higher[3].

For the fertility and mortality rate, the fertility rate in Nigeria is five times higher while the mortality rate is more than seventy times higher in Nigeria. Similarly, life expectancy is twice lower in Nigeria when compared with what is obtainable in these selected countries. This analysis helps justifies reasons for the perpetual rise in Nigerian population overtime. At this juncture, it is expedient to mention that increase in population is very good to happen to an economy. However, it becomes problematic when such population rise cannot be merged or supported with the resource base that is required to make them productive. Whenever the

need to support the rising population of a country with the needed resources (in terms of employment) that could make them productive is undermined, the problem of unemployment occurs.

Unemployment is a major problem in every country. It represents the willingness and ability of unemployed people to work and an indicator of an economy's health. Unemployment as been seen as a condition of people living in absolute idleness ranging from 20-40 years of age, as against underemployment which refers to a situation in which individuals who are gainfully working but not financially paid to authenticate their qualifications[6]. Unemployment has also been defined as the proportion of the labour force without work but available for and seeking employment. An unemployed person has been identifiedas someone without any physical means of livelihood but actively pursuing employment[7]. Economists have explained that unemployment refers to a state of affairs when there are a large number of skilled people of working age in a country who are willing to work but are unable to find work at the current salary levels. Scholars have identified unemployment as people who, for physical or mental reasons, are either unfit for work or don't want to work[8,9].

In relation to population growth or decline, the unemployment rate can either increase or decrease proportionately.The rise in the unemployment rate may invariably be linked to population growth, particularly in developing economies like Nigeria. Therefore, it's problematic to overemphasize the need to monitor the unemployment rate to reduce its impact on the Nigerian economy. In almost every market economy today, the problem of employment, which includes open unemployment, underemployment, low wage employment, social exclusion, idleness, etc, is noticeable. However, in the LDCS they are more serious than in the developed countries. Commenting on the problem of unemployment in some African countries, it has been noted that, in addition, unemployment among young people is still high and is exacerbated by the mismatch between vocational training and the

economy's employment needs. Unemployment primarily manifests itself in the form of under employment[10].The concentration of open unemployment is in urban areas. Unemployment is a major social issue that helps to explain, like a canker-worm, the extent to which the menace of joblessness has eaten the economy

Unemployment is associated with social vices and has been found to be linked to crime; it has never for once ceased to be. One of the causes of these crimes in contemporary society is unemployment. There are rapid changes in the level of reported crime with opposite vectors, and this is ensured even at a low level of the economy[11,12]. Limited job openings available to the workforce indicate a political failure with socio-political and economic consequences. The inability of job seekers to secure profitable employment among these individuals tends to generate disaffection and causes some of them, especially young people, to resort to social vices such as theft, prostitution and political unrest. Indeed, unemployment constitutes the under-utilization of human resources and not only makes them vulnerable to poverty, but also loses the nation's potential income tax revenue by failing to prevent these resources from going to waste[13].

The problem of unemployment in Nigeria is a national issue that should be handled with care. It has been noted in studies that the increasing unemployment rate in Nigeria is of great concern not only to policymakers, but also to society and that the rate of population growth impacts the growth of the economy and hence the output in the economy (gross domestic product)[14]. In an unprecedented economic recession, the rate of unemployment in Nigeria is unimaginably increasing, while population growth is increasing. This duo tyrant (unemployment and population growth) can have devastating effects on the future economy of the nation if not checked. Since independence, particularly in 1973, the rate of unemployment in Nigeria has been increasing in a geometrical progression. Its source could

be traced to the diversification of Nigeria's economy into the oil sector, providing its labor force with only less than 10 percent employment opportunity[15].

As a country, Nigeria has encountered several forms of economic, political and social unrest, just like all over the world. Unemployment caused by individuals and government forces has recently joined the list of social evils we are experiencing in our country, particularly in Nigeria today. The problem of unemployment has become a global phenomenon that demands increased attention, although the effect on developing nations is more devastating[16]. Youth unemployment is unquestionably a major problem in developing countries, including Nigeria, where it affects young men and women with the potential for crime and social unrest. The recent social unrest and political uprising in the north east have underlined the dangers of high unemployment rates, particularly among young people. The study further stated that youth unemployment serves as one of the biggest threats to national security, aside from terrorism, mainly because idle hands are the workshop of the devil. In Nigeria, for instance, political unrest, economic instability, drug abuse, crime, prostitution, human trafficking, terrorism and kidnapping are some of the effects of youth unemployment[17].

Scholars have argued that there have been suggestions in the media and public debates both in France and Greece that youth unemployment may have played a role in the explosion of social unrest, as both countries experience substantially higher-than-average levels of youth unemployment relative to other European union countries[18]. Corroborating these figures, it was contended that in all regions of the world, youth unemployment is high, far higher than adult unemployment. Furthermore, the world bank reveals that the world average for youth unemployment was 12.6 percent in 2010; about 2.5 times higher than for adults[19].

Quite a lot of scholars and studies have attempted to unravel the causes of unemployment and its impact on a country’s economy. In one of such studies, an analysis of the economic effect

of jobs, social security, collective bargaining and industrial legislation in 85 countries was conducted[20]. It was found that rich nations do not control labour as much as poor countries, but instead provide more social security. In addition, the study found that severe labour regulation is detrimental to labour force engagement and causes higher unemployment. Using plant-level production data in a similar study, an analysis of the effect of employment protection legislation (EPL) on manufacturing firms in Chile was carried out covering 1979-1996[21]. The outcome showed no proof of the negative effects of EPL on labour demand. They discovered that the EPL provided the economy with substantial costs.

In Nigeria, economists, politicians, economic managers, people, governments and many others have been very worried about the danger of unemployment both now and in recent times. To this effect, several studieshave all consented to the fact that for a young populated economy like Nigeria, rise in unemployment rate tends to bite harder on the economy than what anyone could imagine and youth are largely at the epicentre of the incessant crises that often result from this[22,23,24,25]. A typical example is the ongoing calls and protests to end the activities of SARS that are largely dominated by the youths. In an attempt at contributing to knowledge, using recent data, the nexus between population and unemployment rate, this study found it appropriate to examine the relationship that exist between unemployment and Nigeria's population over the period 1981-2019.

1.2 Statement of the Problem

The prevailing unemployment rate in Nigeria is so huge that a mere campaign or words of mouth are not enough to address it. Between the period of 2009-2010, Nigeria's unemployment rate rose from 19.7% to 21.1% and rose higher to 23.9% in 2011[26].This upsurge in the unemployment rate was primarily due to the improved number of school graduates with no corresponding work prospects, the freeze on jobs in many institutions in

the public and private sectors, as well as the slow disbursement by the federal government of the capital budget. According to the survey conducted by the international labor organization (ILO) in Nigeria, 39.6% of the total population were persons aged 0-14 years, 56.3% were persons aged 15-64 years (the economically active population), and 4.2% were persons aged 65 years and over.

Given these analyses, it is pertinent to know that in Nigeria, problem of joblessness has mostly impacted the country's youth and economic growth from a wide spectrum of socioeconomic perspectives. It is clear that unemployment, particularly among graduates, impedes the progress of Nigeria in several ways. Unemployment also constitutes political instability for the country, besides the economic waste it has brought unto the nation. The unemployment situation in Nigeria is alarming and even more disheartening because an optimal proportion of the country's labour force can not be absorbed by the prevailing economic condition of the country. This scenario has led to the recent upsurge in crimes rate and other social vices as witness in our society because an idle mind is still the workshop of the devils.

Besides the high rise in the number of jobless graduates in Nigeria, the effect of the unemployment problem became worsen due to bad electricity generation. The low production of electricity in Nigeria has further worsen unemployment rate. For all the attempts made by both the past and present administration to salvage the ever present issue of epileptic power supply, the country has witnessed little or no improvement. As the power issue can not be solved, the companies, organizations and agencies that are supposed to provide some better prospects out of the country for the much-needed jobs flaw, thus leaving our workforce unemployed.

It is, therefore, imperative for a concerted effort from both individuals, government and the world at large to come up with formidable ways of finding a lasting solution to it. To be able to address this problem, a thorough understanding of the dynamic and interplay between population and unemployment is highly required. Through this, government and policymakers will be able to see the need to increase the productive base of the economy to accommodate the upsurging idle youths and make them productive. On this premise, this study investigate the interaction between unemployment and population spanning through the period of 1981-2019.

1.3 Objective of the Study

The main objective of this study is to investigate the nature and extent of the relationship between the growth in population and unemployment level in Nigeria between 1981 to 2020. The specific objectives are to:

1. investigate the causal relationship between the growth in population and unemployment in Nigeria; and

2. analyze the response of Unemployment to shocks in population growth in Nigeria.

1.4 Research Questions

This study intends to provide answers to the following germane questions:

i What is the causal relationship between growth in population and unemployment in Nigeria?

ii To what extent does Unemployment respond to shocks in population growth in Nigeria?

1.5 Hypothesis

Ho1: There is no causal relationship between growth in population and unemployment rate in Nigeria

Ho2: Unemployment does not respond to shocks in population growth

1.6 Ssignificance of the Study

This study focus on issues around population growth and unemployment in Nigeria. As it has been a continuous issue with rising unemployment rate, it is important to study it and proffer reliable solutions to the problem of unemployment in the country. The importance of this study is inherent in its ability to to tackle a critical part of the economy. The country has undergone a continuous increase in the growth rate of population and unemployment rate posing as signs of negative indicators toward development. It is therefore of utmost importance to tackle this issue as it will root out the main causes of unemployment and population growth. This study will be relevant for the government and policy makers on the ways to control unemployment from the angle of population growth. This study will contribute to the body of knowledge and also recommend potential solutions and initiatives to be put in place to tackle the problem that will contribute to growth and development in the country.

1.7Scope of the Study

This study is intended to investigate the nexus between population growth, and the unemployment rate in Nigeria. The data for the study will coverunemployment and population spanning through the period of 1981-2020. What informed the choice of the period is the availability of data for the variables of interest that the study is focusing on.

1.8 Definition of Key Terms

Economic Growth: this is an increase in the production of economic goods and services, compared from one period of time to another

Economic Development: This is an increase in the standard of living of a person and a rise in national income.

Gross Domestic Product: It is a measure of the economic growth and development of a nation, typically measured annually.

Population Growth: This is an increase in the number of people living in a country.

Poverty: A condition where, because of limited financial resources, a person can not adequately provide for his/her needs

Unemployment: A condition in which a person who is able and willing to work does not secure a job.

Youth Unemployment: A condition in which people who are eager and able to work between the ages of 18-35 do not find work.

Youth: Those persons between the ages of 15 and 24 years or or all young people between the ages of 18 and 35.

Endnotes

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Chapter Two

Literature Review

This chapter is a review of the relevant concepts, theoretical and empirical literature on analysis of the relationship between population growth and unemployment in Nigeria between 1986-2019. The literature review forms the nucleus of all research. As an investigation to succeed in new conclusions and establish facts, each research builds on existing data. Literature review provides foundation of knowledge on topic, identify areas of prior scholarship, identify inconsistencies(gaps in research, conflicts in previous studies, open questions left from other research) and place research within the context of existing literature making a case for why further study is needed. The chapter will come under the following sub-headings:

2.1Conceptual Review

2.1.1Unemployment

2.1.1.1 Definitions of Unemployment

Unemployment is that the total number of people who are willing and able to work, and make themselves available for job at the prevailing wage but no work for them. This therefore, implies that unemployment may be a state of joblessness in the country. Unemployment is conceptualized as a situation where by a worker is or workers are involuntarily out of labor . this suggests that workers are willing and able to work but cannot find any work. Similarly, unemployment has been defined by the classical economists because the excess supply of labour over the demand for labour which is cause by adjustment in real wage. The Classical or real wage unemployment occurs when real wages for job are set above the market-clearing level, causing number of job-seekers to exceed the amount of vacancies. Unemployment is a state of joblessness which occurs when people are without jobs and they have actively sought

work within the past four weeks. The unemployment is a measure of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by individuals currently in the labour force[1].

Unemployment is defined as a situation where someone of working age is not able to get a job but would like to be in full-time employment. Employment has always been regarded as one of the important social issues. The fundamental reason that makes it so important is that it does not only affect the economic development of society, but also the stability of the society. Unemployment occurs when an individual who is actively searching for a job is unable to find work. Unemployment is usually used as a measure of the health of the economy. Youth unemployment is characterized by specific complications. this is often not only because jobless, non-employed or unemployed children constitute a less homogeneous group than other groups of unemployed. The working- age population is the population above the legal working age (adult populations), but for statistical purposes it comprises all persons above a specified minimum age threshold for which an inquiry on economic activity is made. Employment determines how a society is like, how it is going to develop. It also affects how individuals define themselves. Imagine if enormous numbers of people are jobless; the consequences must be drastically catastrophic[2].

Unemployment may be a macroeconomic indicator that reflects the inability of an economy to make full use of labor resources. The phenomenon itself is based on the concentration of socioeconomic activity, the event of high productivity means of production, the upper supply of individuals able to occupy the available places in the economy than the real number of them or the non-synchronization of the labor supply and the available places at the regional level or national. Of course, the shortage of adequate conversion of the labor force leads to an increase in the number of unemployed and thus the unemployment rate. the amount of unemployed, somewhat rising in Romania, has two negative effects through the

economic effort of paying unemployment benefit, on the one hand, and therefore the existence of a percentage of the labor resource that cannot be used to increase the production of goods and services, on the opposite part. The analysis of the unemployment figures set within the BIM or AMIG O system reveals the availability of the labor market and the inability to assimilate the national economy. The rate of inflation has a direct correlation with the evolution of the Gross Domestic Product, which we analyzed using some appropriate econometric models[3].

Unemployment is a key macroeconomic indicator because it signals the (in) ability of workers to readily obtain gainful work to contribute to the productive output of the economy. Also it's those people in the workforce who are available for work that does not have a job. Usually measured by the unemployment rate, which is dividing the number of unemployed people by the total number of people in the workforce, unemployment serves as one of the indicators of an economy's status. There are millions of youth are unable to find desirable employment despite their best efforts. More unemployed workers mean less total economic production will take place than might have otherwise. There is a main relationship between economy and unemployment. Economy is always intertwined with society developments. Social changes highly influence the economy environment as well as its structure. There are many factors that cause unemployment problem. Unemployment is highly sensitive to the changes in economic and social environment. As a matter of fact, most of the countries are suffering from the slower-than-projected economic recovery and rise in unemployment[4].

Reducing unemployment and achieving a high rate of economic process are the most important priorities of developed and developing country economies. In terms of the success of a country's economy, economic process and employment are two extremely important macroeconomic variables and are indispensable elements of the economic policies of many countries, especially developed countries. economic process , an indicator of welfare of a

rustic , is measured by GNP or its per capita value[5]. In most macroeconomic books, the concept of economic process is defined as the increase in the amount of goods and services produced in a country during by the time of progress. If we consider that there are many countries with different economic sizes everywhere the world, we will see that some of these countries are very rich, some are very poor, and an excellent majority is among these two extremes. a number of these countries are growing very fast, but some countries are either too slow or not growing in the least. For this reason, researching the explanations for these differences in growth between countries and examining the concept of economic growth has become the focus of attention. Another macroeconomic variable that's an important as economic growth and which is of particular concern to countries is unemployment. Unemployment represents the extent of employment in which people have the desire and ability to work and want to pay but who cannot find jobs. Unemployment arises from the economic structure of a rustic, and it arises from different reasons counting on whether it is a developed or underdeveloped country. the rationale for unemployment in underdeveloped countries is capital inadequacy, while in developed countries technological progress is that the reason[6].

2.1.1.2 Types of Unemployment

There are main types of unemployment: structural, frictional, and cyclical and others.

Frictional Unemployment

Frictional Unemployment is caused by industrial friction in which jobs may exist, yet the workers may be unable to fill them either because they do not possess the necessary skill, or because they are not aware of the existence of such jobs also it occurs when workers leave their old jobs but haven't yet found new ones. Most of the time workers leave voluntarily, either because they need to move, or they've saved up enough money to allow them to look

for a better job. Frictional unemployment exists because there is a mismatch between the offer side and the demand side on the labour market. This happens mostly because the workers are in the search of a better job that will suit them more than their current or previous one. The main reasons are higher wage, better working conditions, better chances for advance in the career, distance from the place of residence, better working hours etc. Because the workers spend some time searching for better job opportunities, frictional unemployment is sometimes addressed as search unemployment. New entrants on the labour market and re – entrants can also spend a short spell as frictionally unemployed. This is due to the search for a better match between employers and job seekers. As being the result of free choice of the individual, not all the factors that are involved in frictional unemployment are internalized. Frictional markets involve search externalities that may not be internalized by agents. Consider a model where the unemployed worker determines how intensely to search for jobs. An increase in search effort implies a higher individual probability of becoming employed. However, there are two externalities which are not taken into account by the individual worker. On the one hand, by searching harder, the individual worker makes other unemployed workers worse off by reducing their job finding rates (congestion externality). On the other hand, by searching harder, the workers make employers better off by increasing the rate at which they can fill their vacancies (thick market externality)[7].

Frictional unemployment is actually good for the economy as long as it last reasonably short, which is usually around four weeks. If being prolonged, frictional unemployment can slowly turn into long – term unemployment. The reason why frictional unemployment is good for the economy is because it allows the better allocation of human resources in one economy, since it matches the needs of the employer with the needs of the employee. However, in the case of long – lasting frictional unemployment the economy will suffer due to inefficiency of the workforce. The wait unemployment, as one example of frictional unemployment, can

produce long – lasting unemployment. It appears when there is a desirable job for which there is a high interest. Many people will wait for that particular job for a longer period of time, not wanting to take into the consideration getting different job that can also suit them[8].

Frictional unemployment also explains why the concept of full employment can never be reached. Existing frictions on the labour market are implying that there must be some workers looking for a better job. Because of that, the concept full employment is often replaced with the concept of ideal unemployment. Ideal unemployment presents the situation where only frictionally unemployed workers are available on the labour market, which implies that the two sides of the labour market, demand and supply, are in equilibrium. When the labour market is in the equilibrium, the frictional unemployment is at its maximum level, because there are enough matches between job – seekers and employers. In the case of bigger job demand than job offerings, the frictional unemployment is dropping because there is a mismatch. The same case occurs when the job offer is higher than the demand. The main problem with the frictional unemployment is that it doesn't enter the statistical records and can be considered as hidden unemployment[9].

Structural Unemployment

This reflects a mismatch between the skills and other attributes of the labor force and those demanded by employers. If 4 workers each take six months off to re-train before they start a new job, the aggregate unemployment statistics will record this as two unemployed workers. Technological change often increases structural unemployment. Structural unemployment is caused by a mismatch of skills between the unemployed and available jobs. Structural unemployed is caused by changes within the economy, like de-industrialisation, which leaves some unemployed workers unable to seek out work in new industries with different skill requirements. Structural unemployment occurs even during times of strong economic

growth. it's a form of supply-side unemployment and not insufficient aggregate demand (AD). Policies to scale back structural unemployment include retraining and geographical subsidies. Fiscal or monetary policy to spice up AD will be ineffective in solving structural unemployment[10].

Structural unemployment refers to a mismatch between the jobs available and the skill levels of the unemployed. Unlike cyclical unemployment, it's caused by forces other than the business cycle. It occurs when an underlying shift in the economy makes it difficult for some people to find jobs. It is harder to correct than other types of unemployment.Structural unemployment can keep the unemployment rate high long after a recession is over. If ignored by policymakers, it creates a higher natural unemployment rate[11]. Factors that contribute to structural unemployment include government policy, competition, technology, and more. When there are jobs available, but workers cannot access these jobs as a result of their location or due to a lack of the needed skill sets, this creates structural unemployment. Structural employment is often rooted in major economic shifts. De-industrialization is a common cause: as an industry leaves a given region, many workers in that region are left jobless, with skills that do not apply to the jobs that are now available to them. Structural unemployment can arise even in periods when economic growth is progressing, and when the economy is thriving. It also tends to impact older workers more than younger ones[12].

Causes of Structural Unemployment

Geographical immobilities are one among the causes of unemployment. this happens when workers are unable to move from areas of high unemployment to areas with labour shortages. this might occur due to the difficulties of buying/renting a house. It could even be due to family attachments to their current area. Another factor which will lead to structural unemployment is occupational immobilities. this happens after changes in the economy,

which cause shifting demand for skilled labour. for instance , if there's a closure of manufacturing firms, workers with skills for these sorts of jobs may struggle to relocate in new industries where very different skills are required (e.g. IT skills, teaching, accountancy). It takes time for people to retrain and older workers may feel it's too difficult. Furthermore, globalization and trade can lead to shifting patterns of manufacture and labour demand. In recent decades, many firms have shifted the manufacture of clothes from high wage, western economies to Asian economies, such as China, India and Bangladesh. This has caused a degree of structural unemployment for those who have lost jobs in Western industries. Globalization and free trade do create new opportunities. For example, as old industries have declined, new industries have emerged, such as higher tech manufacture, IT, computing, insurance, and internet based companies. However, these new industries may require a different skill set to previous manufacturing jobs, and it is this that can cause structural unemployment[13].

Cyclical Unemployment

Occurs when there is not enough aggregate demand in the economy to provide jobs for everyone who wants to work according to the economic status. Business cycles in the integrated economic activity; when there is a decline in the demand for transit of goods, forced factory owners to reduce the number of workers or reduce their working hours. Cyclical unemployment could even be a form of unemployment that occurs as a result of an economic decline or periods of negative economic growth in a business cycle. Cyclical unemployment have also been called deficient-demand unemployment or the Keynesian unemployment. What these three terms have in common is that the foremost factor causing unemployment: demand. Deficient-demand means the mixture demand in an economy is less than the aggregate supply, which could cause a surplus of products on the market. In

other words, households an economy during which people are less likely to consume, for many reason which often result in unemployment.

In situations of economic decline, economists and policymakers concentrate on creating tools to reduce the adverse effects of cyclical unemployment as effectively as possible. Cyclical unemployment happens after an economy enters a period of contraction—that is to mention, an economic decline or recession. Cyclical unemployment are often described as a sequence of events that starts with a recession. The chain goes as such: First, when an economy goes into a recessionary phase, there's a decrease in demand. When an economy encounter recession, consumers in the country are overall less likely to spend. As demand decreases, businesses are forced to urge off workers to form up for losses in sales and reduce expenses. They still do this until supply decreases to meet the new demand[14]. Other types of unemployment are residual which is caused by personal factors such as old age, physical or mental disability, poor work attitude and inadequately training and technologicalunemployment which is caused by changes in the techniques of production. Technological changes are taking place constantly, leading to the increased mechanization of the production process.

2.1.1.3 Causes of Unemployment in Nigeria

There are several causes of the high level of unemployment being experienced within the country. this is often in spite of the massive oil wealth and Nigeria being the 6th largest producer of oil in the world. a number of the fundamental factors that account for the high rate of unemployment in Nigeria include the following[15].

1. Low Economic Growth Rate

The overall situation in the country in the 1980s, 1990s and even during this decade has been very hostile to economic growth and development. The high level of corruption,

mismanagement of public funds, harsh economic policies and therefore the insecurity of the Nigerian environment coupled with long – term despotic rule of the military among other determinant have affected economic growth for ages. In essence, low economic process is manifested in low economic activity and investment rates, which don't generate enough additional employment. the mixture of both low economic activity and high population growth results in a scarcity of jobs, meaning that hiring is predicated more on experience and education, the very assets children are struggling to acquire[16].

2. Adoption of Untimely Economic Policy Measures

Another crucial factor that has elicited unemployment problem is that the type and timing of various economic policies adopted in the country. as an example , with the introduction of the Structural Adjustment Program (SAP) in September 1986 that ushered in liberalization, deregulation and therefore the devaluation program of the domestic currency, many of the teething domestic firms within the country collapsed. This resulted within the loss of many jobs and thereby rendering many people unemployed. The negative effects are still being felt within the country till today. Although, these policies were designed to leap start the growth of the economy, but given the structure of the Nigerian economy, a number of the policy packages became out rightly inimical to the system due to wrong timing[10].

3. Wrong Impression about Technical and Vocational Studies

The wrong impression of students about the place of technical and vocational education is also a factor that accounts for the deteriorating state of unemployment in Nigeria. there's an enduring societal biased attitude against technical and vocational education. an out-sized number of job seekers lack practical skills that could enhance self - employment. that's why rather than providing jobs for others, the graduate unemployed persons keep counting on the government and the non-vibrant private sector for job offers[10].

4. Neglect of the Agricultural Sector

The agricultural sector has been the leading provider of employment in Nigeria especially within the sixties and in the seventies when the sector provided employment for more than 60 percent of the Nigerian population. However, unfortunately, within the wake of oil discovery, the eye on this anchor of the economy was gradually drawn away to the oil sector where employment capacity is very low. The resulting effect is that the large number of job seekers who have no place in the oil industry. Even with the expansion of the industry, unemployment has continued to grow at an alarming rate[10].

5. Poor Enabling Environment

The poor economic enabling environment that characterizes the Nigerian economy over the years have continued to pose serious challenges to employment generation. This, including poor security environment has continued to hamper investment drives and thereby reducing the prospects of employment generation. Many job seekers who would have began self - employment programs are unable to do so because of the hostile production environment. Others who make attempt are forced to finish up due to absence of infrastructures and the overall heat of the investment environment[10].

6. Rural-Urban Migration

The rapidly growing urban labor pool arising from rural urban migration has been identified as a cause of unemployment. Rural-urban migration is typically explained in terms of push-pull factors. The push factors include the pressure resulting from man-land ratio within the rural areas and the existence of serious underemployment arising from the seasonal cycle of climate. The factors are further exacerbated in Nigeria by the shortage of infrastructural facilities, which makes the agricultural life unattractive. Youths move to urban areas with the probability of securing lucrative employment within the industries. additionally to this, there's

the concentration of social amenities in the urban centers. This meant that the agricultural areas are neglected in the allocation of social and economic opportunities[10].

7. Rapid Population Growth

It is argued that the high population growth rate has resulted in the rapid growth of the labor force, which is way outstripping the supply of jobs. The accelerated effect of population growth on Nigeria's unemployment problem is multifaceted. It affects the availability side through a high and rapid increase in the labor force relative to the absorptive capacity of the economy[10].

8. Education System

The outdated school curricula and lack of employable skills of the many school leavers have also been adduced for the high level of unemployment in the country. it's been argued that the average Nigerian graduate does not possess the skills needed by the employers of labor for a formal employment and could therefore be said to be unemployable. Complains by employers is that graduates are poorly prepared for work. They believe that academic standards have fallen considerably over the past decade which a university degree is no longer a guarantee of communication skills or technical competence. As a result, university graduates are commonly viewed as "half baked." Often, this problem is attributed to the country's education system, with its liberal-arts bias. per annum , the country's higher educational institutions end up thousands of liberal arts graduates who are not in higher demand in the labour market. Additionally, the course contents of most tertiary education in Nigeria lack entrepreneurial contents that might have enabled graduates to become job creators rather than job seekers[10].

9. Rapid Expansion of the Education System

There is a rapid expansion of the educational system which leads to increase in the supply of educated manpower above the corresponding demand for them. This contributes to the matter of the youth unemployment in Nigeria. as long as most courses are completed in four or five years, many of those students that enrolled entered the labor force annually. These don't include the number of Nigerians of working age that dropped out at secondary school level for various reasons and entered the job market in the rural and urban areas[10].

10. Gradual Collapse of Manufacturing Sector

Currently, there exist no vibrant sector with the capacity to absorb the entire unemployed youths in Nigeria. There are numbers of collapsed industries in Nigeria. numerous of the surviving firms have been classified as "ailing," a situation that poses an excellent threat to the survival of manufacturing in the country[10].

2.1.1.4 Socioeconomic Implications of Unemployment in Nigeria

The socioeconomic effect of unemployment in Nigeria, like most other African countries is extremely sever and threatening to the citizenry and the economy as a whole. The unemployment episode has continued to pose numerous challenges to the survival of the Nigeria nation. While a number of these consequences bother directly on the unemployed, others like epidemics are limitless in effects.Youth unemployment may be a crucial issue in Nigeria because the youth constitute a major part of the labour force and they have innovative ideas, which among other factors are important within the development process of the country. aside from economic waste, it also constitutes danger to political stability. Unemployment in Nigeria has affected youth from a broad spectrum of social economic groups: highly educated also as less educated, men also as women. However, statistics have shown that youths are more particularly stricken than the other segments in Nigeria[17].

2.1.1.5 Unemployment and personal Well-being

Unemployment in Nigeria features a very serious negative effect on the personal well-being of the unemployment. Until recently when a really small number of the affected people benefited from the poverty reduction program of the government, the effect was quite server on those involved. In cross sectional regressions, there's clear evidence that unemployment is associated with lower levels of psychological well-being. The unemployment is somewhat worse than being divorced in its effect on subjective measures of private well-being unemployment dehumanizes the unemployment and causes partial or total loss of esteem among peers. The unemployed feels inferiorand sees life as totally demeaning. This is often the situation of many of the Nigeria Job seekers[18].

2.1.1.6 Unemployment and Poverty

One of the core causes of poverty in Nigeria today is the inability of many job seekers to secure gainful employment. This has further worsened the income inequality crisis that characterizes most African economies. Largely, the increasing level of unemployment can explain the increasing level of poverty in Nigeria for which available information currently puts at 70 percent. This ugly trend of unemployment rate in the face of rising cost of living, has conditioned many people to a very low and undignified standard of living in Nigeria and the African region as a whole[19].

2.1.1.7 Unemployment and Social Crimes

Unemployment accounts for most of the social crimes perpetrated by youths in the Nigerian society today. The accelerating level of prostitution, armed robbery, rape and all facets of violence can be largely attributed to the incidence of unemployment. An examination of most of the apprehended criminals shows that a large number of youths that engage in criminal activities are those without gainful employment. Some of these criminals are people who

have the potentials for gainful employment but have been denied such opportunity. Unemployment then can be seen as one of the core causes of the rising level of social disorder and insecurity permeating the entire country of Nigeria[11].

The adverse effect of high unemployment on the domestic economy can't be quantified. the supply of abundant human resources if utilized could as great catalyst to economic growth but if otherwise, could exert negative influence on the economy. The resulting effect of unemployment like perpetration of violence and general insecurity threatens economic growth and development to a large extent. Therefore, instead of being a source of growth stimulation, the military of the unemployed remains a potential threat to the well-being of the economy. it's imperative to note that at a social level, prolonged unemployment usually leads to some form of social pathology, as reflected by an increased rate and violent aviators. It breeds discontent against the state, and any sight provocative issue or incident may trigger violent demonstrations and social unrest, which can result in loss of life and damage to property, if things is not handled properly by the authorities[20].

2.1.2Population Growth

Population growth is the increase in a country‘s population during a period of time, usually one year, expressed as a percentage of the population at the beginning of that period. It reflects the amount of births and deaths during the period and the number of people migrating to and from a country. increase is the number of individuals in a population increases in a given time period, expressed as a fraction of the initial population. Specifically, it refers to the change in population over a unit period of time , often expressed as a percentage of the amount of individuals in the population at the beginning of that period. A positive growth indicates that the population is increasing, while a negative growth indicates that the population is decreasing[21].

The role played by population variables within the development of a country cannot be overemphasized. This is often because, majority of the programmes and policies most governments implement are either directly or indirectly linked with population growth characteristics, all of which are geared towards sustainable development. The commitment of the Nigerian government to enhance the quality of life of the Nigerian population has been expressed in development plans, programmes, policies and projects. This is often because they recognize the intricacy of population – development relationship and the importance of population factors in the development of the country[22].

One key factor causing unprecedented growth of population in Nigeria is birth rate and this has affected largely the rate of population growth. There are many factors responsible for the increase in birth rate. In Nigeria, religions, superstitions and customs have encouraged increase. Many religions in Nigeria promote large families with the encouragement of early marriage and polygamous family system while some prohibit the foremost effective forms of birth controls like the use of contraceptive and family planning. Early marriage tends to steer to high birth rate because women will have opportunity of having many children due to long child bearing/reproductive years. Many cultures in Nigeria highly valued the son than the females for a variety of reasons: some for sustenance of family prestige; some for greater upper-body strength for physical labour in the farm or during war while some for old age social security. This son preference leads to the common practice of continuous child birth in an attempt to have more male children[23].

Illiteracy rate is additionally worth mentioning as a factor in population growth in Nigeria. The summary of characteristics of the 2003 and 2008 Demographic and Household Surveys (DHS) samples on average age and years of education shows that educational attainment in Nigeria remains low, and consistent with the 2006 Census, about 47 percent of the population is illiterate. The survey reported that about 36 percent of girls have no formal schooling. The

mean years of education appear to possess decreased between the two DHS surveys, which indicate poor educational policy or poor data quality and implementation of programs. Again, consistent with the 2006 Census, the typical household size is large, with over 72 percent of households having a minimum of five people. Mean household size within the DHS surveys confirms this. Marriage is comparatively universal in Nigeria and those who are widowed or divorced at younger ages often remarry[26].

It also shows that urban residents have greater levels of education than their rural residents. 69 percent of urbanites have secondary or higher levels of education, whereas, only about 37 percent of rural dwellers do. This is not surprisingly because educational access is more difficult in rural areas, as there are fewer schools and fewer resources, in addition to the tradition that rural children are often kept from attending school to help with agricultural or home chores. On average, women are a lot less educated than men. The high rate of illiteracy among the Nigerian population and in particular among women posts a major problem to the Nigerian economy. Illiteracy brings poverty, diseases, insecurity, homelessness, unemployment; and general backwardness. Besides, high rate of illiteracy among the Nigerian women will increase the rate of teenage pregnancy that in turns increases the fertility rate which eventually leads to overpopulation[26].

A growth ratio of zero indicates that there have been the same number of individuals at the beginning and end of the period—a growth rate may be zero even when there are significant changes in the birth rates, death rates, immigration rates, and age distribution between the 2 times. A related measure is that the net reproduction rate. within the absence of migration, a net reproduction rate of quite 1 indicates that the population of females is increasing, while a net reproduction rate but one (sub-replacement fertility) indicated that the population of females are decreasing[24]. The Population Reference Bureau report indicated that the speed of natural increase in Nigeria was 2.5%. The Report further showed that if the population

continues to grow at that rate, the entire population of Nigeria would be 261.7 million in mid 2030 and 396.5 million in mid 2050, making Nigeria the 3rd most populous country within the world[25]. Nevertheless, the PRB reported a rather different situation. Though there was no rate of growth in the report, it however projected population of 397 million by 2050 making it the 4th most populous country within the world[26].

2.2Theoretical Review

2.2.1 Classical Theory of the Unemployment

Classical Theory believes that full-employment is the employment level the economy will return to, and tends to remain at in the long run. Classical unemployment occurs when real wages are kept above the market-clearing wage rate, leading to a surplus of labour supplied. Classical unemployment is sometimes known as real wage unemployment because it refers to real wages being too high.

The essential feature of the theory is that the labor market forces of supply and demand respond to changes in real wages. Thus, unemployment is the consequences of real wages being an remaining too high to allow the labor market to deer, government wage regulation and especially powerful trade unions are identify as significant causal factors. Thus, unemployment in the classical system hangs or not creating markets. The policy implication flowing firm classical analysis of unemployment is that in order to reduce unemployment it needs reduces government regulation and reduce trade union power and make the labor[27].

2.2.2 Keynesian Theory of Unemployment

The ideas of the British economist, John Maynard Keynes in 1930s revolutionized thinking in several areas of macroeconomics including unemployment, money supply, and inflation which is seen in his publication of 1936 as the general theory of unemployment interest and money.

Cyclical or Keynesian unemployment also referred to as demand deficient unemployment occurs when there is no aggregate demand in the economy. It gets its name as a result of its variation with the trade cycle, although it can also be persistent as during the great depression of the 1930's. Cyclical unemployment grows when there is economic down turns and falls when the economy improves. Keynes argues that this sort of unemployment exist due to inadequate effective demand. Demand for many goods and services falls, less production is needed; wages don't fall to meet the equilibrium level and mass unemployment results. The Keynesian framework postulate that increase employed , capital stock and technological change are largely endogenous. Thus the expansion of employment is demand determined and that the fundamental determinants of long term growth of output also influence the growth of employment[28].

In the Keynesian theory, employment depends upon effective demand which ends up in increased output, output creates income and income provides employment. Employment was considered a function of income. Effective demand is decided by aggregate supply and demand functions. The aggregate supply function depends on physical or technical conditions which do not change in the short run, thus it remains stable. Keynes targeting aggregate demand function to fight depression and unemployment[30]. Thus employment depends on aggregate demands which successively are determined by consumption demand and investment demand. consistent with Keynes, employment are often increased by increasing consumption and or investment. Consumption is dependent on income C(y) therefore, when income rises, savings also rises. Consumption are often increased by raising the propensity to consume in order to increase income and employment but the psychology of the people (taste, habit etc) which also are constant in the short run. Therefore the propensity to consume is stable. Employment thus depends on investment[29].

2.2.3 Malthusian Theory

The relationship between food production and food supply was first expressed by an English Economist, Thomas Robert Malthus. Malthus stated that population increased in a geometric progression, while food production increased in arithmetic progression. Thus, population grew faster than food production and tended to outstrip it in a short time. He wrote; unless humans can limit reproduction voluntarily through self-restraint, population would be reduced by catastrophic events such as diseases, starvation, misery and wars. He believed that a balance between population growth and food supply can be established through preventive and positive checks.

2.3Review of Empirical Studies

2.3.1The Impact of Population Growth and Unemployment

Scholars have carried out various examinations to show if unemployment rate is mainly caused by changes in demographic factors in Nigeria or if there are other intrinsic factors responsible for this social challenge. This was done by extracting secondary data from Population Reference Bureau, United Nations Annex Table, International Monetary Fund, and National Bureau of Statistics. A comparative analysis of the population and unemployment structure of three positively selected and heavily populated countries in the three different Continents-Nigeria, China and USA were undertaken. The results shows that population growth is not the sole factor responsible for increase in unemployment in Nigeria as unemployment statistics is stable for U.S. and China while their populations are growing, but the reverse is the case for Nigeria as both population and unemployment are growing at the same time[30].

Youth unemployment which has become a growing concern in Nigeria has been investigated by researchers to work out its causes. The study examined causes of youth unemployment in

Nigeria because it relates mostly to moral bankruptcy in public leadership. Data were sourced from secondary sources for the study and it sets its analysis in the context of the neoliberal theory. The results of this study revealed that youth unemployment is caused mainly by corruption among the general public office holders that has led to the degrading nature of infrastructures, security, and neglect of agriculture. The study therefore recommended that Nigerian government should make its educational system self-reliance for the youths through the introduction of vocational and technical courses. Above all, Nigerian government should insist that its society has the enabling environment for business activities to thrive which may as well accommodate investors and other businesses globally[31].

These issues have led to several debate and scholarly research to examine how population growth impact unemployment rate and also to investigate others factors that may be responsible for continuous growth of unemployment apart from population growth in Nigeria.

Economists have identified unemployment as a huge problem in Nigeria and major cause of misery, social unrest and hopelessness. Being a source of concern for policy makers, scholars have examined it thoroughly. A study on the effect of population growth on unemployment in Nigeria was conducted by a scholar with the aim of identifying the determinants of unemployment in Nigeria., target the impact of macroeconomic policy on unemployment and estimate the spread between actual and natural rate of unemployment in Nigeria.Time series data between 1970 and 2015 was used. The method of analysis employed were Vector Error Correction Model (VECM), Vector Auto-Regressive (VAR)and Ordinary Least Square (OLS) to achieve these objectives. The result from the study indicated that the impulse of economic growth to unemployment, shows that for a one standarddeviation shock, the unemployment oscillate from positive to negative between 1st and sixthperiod but consistently become negative from seventh till the tenth period. In addition, impulseof exchange rate to unemploymentshowed that a one standard deviation shock, makes theunemployment to be

positive throughout the entire periods. The study concluded that there exist a long-run relationship or causality running from lag value of GDP growth rate, real minimum wage, and interest rate; while most macroeconomic policies do not have long-run run relationship with unemployment. The scholar recommended that measures should be adopted to check population growth and to improve the health of mother and child, child spacing should be encouraged among parents[32].

In an attempt to learn about the impact of population growth on unemployment problem in Nigeria, a study was conducted to figure out the reason why the current rate of unemployment in Nigeria remained constantly high and rapidly increasing over the years. The objectives of the study was to investigate the impact of population growth on unemployment in Nigeria between 1991 and 2017. The data for the study was estimated usingthe Dynamic ordinary least squares (DOLS). The result of the study showed that positive exchange rate which will lead to depreciation in the value of the local currency. It was also found that increase in population will in the same way cause an increase in the total supply of labour thereby causing excess supply over the demand for labour in the economy. Furthermore, consumer price index, GDP per capita and foreign direct investment all have negative relationship with the unemployment which imply that these macroeconomics variables influence reduction in the rate of unemployment in the long-run[33].

The relationship between population growth and unemployment in Nigeria was examined using data from secondary sources which covered the period of 1991-2016, sourced from the world Bank data base. The technique of analysis used was the Johansen Cointegration and Error correction model. ADF unit root test was carried out to establish the order of integration of the variables. Granger causality test was conducted to examine the direction of causality among the variables. A positive relationship was found to exist between increase and unemployment. The results of the regression analysis shows that population plays a major

role in the increased level of unemployment in Nigeria. The findings of the study showed that increased population has a strong impact on unemployment in Nigeria. This suggests that a rise in population growth leads to a rise in unemployment. The study concluded that to combat the acute unemployment within the country, the govt should ensure there is job creation especially in the agricultural and manufacturing sectors. Private sectors employers should tend subsidies so as to encourage them to employ more people[34].

The impact of population on unemployment in Nigeria had also been studied by some scholars in Nigeria with the objective of analyzing the relationship between unemployment and population growth in Nigeria. The specific objectives were to analyze the relationship between population growth and unemployment, find out causes of population growth and unemployment and to suggest measures and policy to address the problem. A regression model was used to describe the statistical relationship between population growth and unemployment. The result of the analysis shows that population plays a highly significant role in the rise of unemployment in Nigeria which implies that a rise in population growth leads to a rise in unemployment. The study also revealed that the major reasons for a rise in population include increase in birth rate, socio-cultural beliefs and improvement in welfare and medical facilities. It is also important to note that the negative effect of population growth outweighs that of the positive. It was suggested that everyone on all grounds including individuals, agencies and government should take a stand and play important roles in stabilizing population growth as well as minimizing unemployment in the country in order to improve the country's growth and development on all grounds[35].

Other researchers have also explored the reason why an increase in the population without correspondent increase in human basic needs and infrastructure brings about poverty and high crime rate. The objective was to know and understand the relationship between poverty, unemployment and population growth on economic growth in Nigeria. Autoregressive and

distributed lag co-integration bound test were carried out on the data. The result of the test shows that population and FDI have a positive impact while poverty and unemployment has negative impact on GDP. It was therefore recommended that policy makers should grow the real economic sectors to improve and enhance productivity, exports, job creation, curb inflation and reduce poverty and rapid economic growth and also substitute the non-productive imports with domestic products and develop enabling environment to attract foreign private investors[36].

2.3.2 The Impact of Population Growth and Economic Growth

Nigeria currently ranks because the seventh most populous country in the world. However, there's no consensus in the empirical literature on the effect of this growing population on economic development. Some researchers have explored the effect ofincrease on the economic growth of Nigeria over the period of 1981 to 2015. Data on GDP and rate of exchange were obtained from Central Bank of Nigeria Statistical bulletin, while data on increased population growth rate, birthrate, and death rate, were obtained from the World Bank World Development indicators. Ordinary method of least squares regression was used to analyze data in this study. The findings of the study reveals that increase has a positive and significant effect on economic growth of Nigeria, while fertility was negative and significant for economic process in Nigeria. rate of exchange and crude death rate are however insignificant for economic growth of Nigeria. The study recommended that the Nigeria government should make sure that Nigeria's rising population are channeled into areas of the economy where they may more fully utilized in bringing about high rates of economic growth for the country. Additionally, the Nigeria government should increase access to affordable health care services so on reduce death rates in order for Nigeria to achieve increased economic growth[37].

In a related study, scholars made attempt to estimate the impact of unemployment on the economic growth in Nigeria, using time series data from 1999 to 2017. The data used in the study were sourced from the Central Bank of Nigeria database and World Bank. The OLS and pair-wise Granger Causality methods of analysis were employed in the study. From the result of the analysis, it was observed that the Granger causality test shows a unidirectional relationship between unemployment and Nigeria's economic growth. Population growth result indicate a linear relationship with economic growth. This according to the researcher signifies that government should encourage natality rate with robust quality education and human capital development. The study recommended that there should be provision of development in other economic sectors which will actually diversify the economy and create employment to the teeming unemployed youth in Nigeria[38].

Similarly, scholars have also contributed to the continued investigations into the effect of population growth on economic development in Nigeria. A study used annual statistic data for the period 1980 to 2016 and adopted the OLS regression technique. The results indicate that increase retards economic development in Nigeria. However, the results further show that credit to the private sector is a crucial driver of economic development in Nigeria both in the short-run and long-run. The study recommended that the government should make policies which will control the escalating population; ensure that the existing population becomes more productive; and deepen the availability of credits for the private sector will enhance economic development in Nigeria[39].

Given that the impact of population growth on economic growth has always been a subject of disagreement among economists and given Nigeria's high rate of population growth. Researchers have evaluated the impact of population growth on economic growth in Nigeria from 1980 to 2010. The data used were analyzed using descriptive statistics as well as regression analysis. The result revealed that there's a positive relationship between economic

growth (proxy by GDP growth) and population, fertility and export growth while negative relationships were found between economic process (proxy by GDP growth) and life expectancy, and crude death rate. It had been recommended among others that the average population growth rate of Nigeria should be maintained since it is found to impact positively on economic growth in Nigeria within the period of study and that measures should be adopted to check the crude death rate of Nigeria as it affects economic growth negatively[40].

In a related study, population, economic process and development in the emerging economies from 1994-2010 have been examined. The study applied multivariate analysis model and the result shows that economic development is the primary objective of the majority of nations in the world, one among the key factors to be taken into consideration when analyzing the growth of population growth. Human capital development and economic growth are related to each other. Economic growth provides the conditions for human development and human development provides opportunities for economic growth. Developing countries are unable to afford a rise of such rapid population (as is currently happening and is expected to happen in the coming years). This may negatively affect quality of life and slow economic growth[41].

The relationship between population growth and economic growth in Nigeria using time series data spanning from 1970 to 2014 had also been studied by researchers. The data were analyzed using ordinary least square estimation technique. The result revealed among other that each one the core variables (i.e. fertility, mortality and net-migration) of the study are inversely associated with economic growth during the investigated period. The study further revealed that gross fixed capital formation (GFCF) and savings are strong drivers of economic process in Nigeria. Sequel to the findings, the Nigerian government is suggested to make direct efforts toward checking the alarming fertility rate in Nigeria. Also efforts should be made to enhance the quality of Nigerian labour force through more substantial investment in education and skills acquisition programmes so as to improve productivity in Nigeria[42].

The determinants of unemployment in Nigeria was explored by some scholars with a focus on the determinants of unemployment of Nigerian females. The objective of the study was to estimate the relationship between unemployment and its effect on female's employment opportunities in Nigerian over the period of 1991 to 2017. The study was carried out on the basis of the annual time series data from the period of 1991-2017 by using the ordinary least square (OLS) technique and interaction term for the data analysis for the estimation of the study.It was discovered that FDI has a negative and significant effect on unemployment, while remittances have a positive and significant effect on unemployment. It was concluded that the increased remittances inflow is productive for the reduction of unemployment level of Nigerian females[43].

Studies have also been extended to review the relationship between poverty and unemployment in northern Nigeria. This was examined using descriptive and a logistics regression model to research the 102 cross-sectional data randomly collected from the three geopolitical regions in the state. The result thus shows the existence of a proportionate relationship between poverty and unemployment, following the pattern of previous studies. The study thus recommends the actions of the policymakers in creating vocational skill programs to the aid-curb unemployment problem within the state. Accordingly, the rise in expenditure on education and the minimum wage as well recommended[44].

Unemployment being a worldwide economic issue, researchers have attempted to understand the macroeconomic determinants of unemployment and given the persistent and increasing rate of unemployment in ECOWAS region, despite the moderate economic growth recorded in recent years. One of such studies, examined the relationship between certain macroeconomic aggregates and unemployment in ECOWAS region between 1991 and 2014. Static panel data estimation techniques and panel fully modified ordinary least squares (FMOLS) are employed in the estimation of this study. The study discovered that GDP

growth, labour productivity, population and FDI are the significant determinants of unemployment rate in the ECOWAS region. It was found that there exist a negative relationship between GDP growth and unemployment, inflation exert a positive impact on unemploymentshowing that the Phillips curve hypothesis does not hold in the ECOWAS region. It was also discovered that there is a weak inverse relationship between FDI and unemployment which is indicative of the fact that FDI in the region flows to low labour intensive sectors[45].

Similar study was conducted in Pakistan with the objective of finding the relationship between youthunemployment and its effect on Pakistan's economy, and to give somesuggestion to the government of Pakistan for the reduction of youthunemployment in Pakistan. The study used time series data covering the period of 1991 to 2016 sourced from world development indicators (WDI). The study applied the Ordinary Least SquareMethod (OLS), Fully Modified Least Squares (FMOLS) and Robust LeastSquare (RLS) methods of analysis. The result revealed that foreign direct investment, inflation andgovernment expenditure have significant impact on unemployment inPakistan during the period under the study, however, population growth andwage do not show important association with the unemployment rate duringthe period under this study.It was recommended by the researcher that the regime must focus on to encourage external investors and that supervision must be taken on strategies for enticing foreign investors to encourage and support the investor to come and invest[46].

2.3.3 The Impact of Unemployment on Economic Growth

The effects of unemployment on economic growth in Nigeria has also been examined by several scholars. One among such studies examined the relationship between unemployment and economic growth in Nigeria. These were with the view to research the impact of unemployment on economic growth and proffer recommendations towards enhancing

economic growth and reducing unemployment in Nigeria in this present time economic challenges. Annual secondary data sourced from the financial institution Statistical Bulletin and National Bureau of Statistics covering the period 1986 to 2015 were used. Data collected include percentage and growth rate of Gross Domestic Product. Data collected were analyzed using the ARDL Bound Testing and therefore the Parsimonious Error Correction Model (ECM) of the ARDL Model to test the relationship and analyzed the effect respectively. The findings showed that there's no long- runs relationship between unemployment rate and Economic growth in Nigeria; although, with effective policies, the long-run increase in unemployment characterize a growth enhancing mechanism on the growth of the economy which is statistically significant ($t=3.748221$, $p<0.01$). Also, results from the short-run Parsimonious Error Correction Model indicate that a 1% increase in unemployment lead to 20.6% increase in real output in the third period which is statistically significant ($t=2.055056$, $p<0.1$). This shows that unemployment in Nigeria is growth enhancing through the informal sector. The Error Correction Term (ECT) shows a speed of adjustment of 65.5% between the short-run disequilibrium and long term equilibrium. The study recommends among others, the need to formulate policies to ensure entrepreneurship development such as the deregulation of the labour market which is likely to reduce unemployment and improve the growth and welfare of Nigerians[47].

The nexus between unemployment and economic growth in Nigeria covering a temporal period 1986 to 2018 was investigated by some researchers. The model of the study was built by specifying GDP rate of growth as a measure of economic growth and percentage as a measure of unemployment while capacity utilization, government expenditure and inflation were used as control variables. Secondary data were sourced from CBN Statistical Bulletin of varied editions and World development indicators. The variables employed were estimated using auto regressive distributed lag (ARDL) for brief and long run relationship. Counting on

Okun's Law theory, the study found that, variables is co-integrated, implying that they move together during a long run. It further revealed that, there exist both short and long term relationship between unemployment and economic growth and that unemployment has an inverse relationship on economic growth in the long run but not significant while the study found capacity utilization to be more significantly impacted on economic growth more than others.[48].

Similarly, another scholar examined the consequences of unemployment on economic growth in Nigeria between 1980 to 2010. The study modelled Gross Domestic Product (GDP) against percentage , Government Expenditure and funds . Secondary data were sourced from CBN Statistical Bulletin and Annual abstract of statistics. Estimation was done using of Ordinary Least Square regression technique and findings revealed that unemployment doesn't significantly affect economic growth, but an honest performance of an economy in terms of per capita growth may therefore be attributed to the other factors affecting economic growth in the country[49].

Using unemployment rate was used as the independent variable while growth rate of Gross Domestic Product was used as dependent variable, the relationship between unemployment and economic growth in Nigeria covering the period 1986 to 2015 was examined. The study relied on annual secondary data sourced from the Central Bank Statistical Bulletin and National Bureau of Statistics. The objectives of the study were achieved using the Auto Regressive Distributed Lag Bound Testing as well as the Parsimonious Error Correction Model (ECM). The findings showed that there is no long- run relationship between unemployment rate and economic growth in Nigeria[50].

Similar study was conducted to estimate the impact of unemployment on the economic growth in Nigeria, using statistic data from 1999 to 2017. The data used were sourced from the Central Bank of Nigeria database and World Bank' data Bank. Explanatory research

design was employed using Augmented Dickey-Fuller, Philip- Perron Unit root tests, OLS and pair-wise Granger Causality. The main objective of the study is to analyse the impact as well as the direction of the causality among the GDP which proxies for economic growth and in line with Okun's law. The Granger causality test shows a unidirectional relationship between unemployment and Nigeria's economic growth. The increase result which is also included in model is contemporaneous to the economic growth. The linear relationship of the increase signifies that government should encourage natality rate with robust quality education and human capital development. The study recommends provision of development in other economic sectors which can actually diversify the economy and create employment to the teeming unemployed youth in Nigeria[51].

A similar study focused on the Effect of Unemployment on economic growth in Nigeria modeling Gross Domestic Product (GDP) against Unemployment rate, Government Expenditure and funds. The research make use of Ordinary Least Square regression technique, the result shows that unemployment doesn't significantly affect economic growth, but an honest performance of an economy in terms of per capita growth may therefore be attributed to the other factors affecting economic growth in the country. A serious policy implication of this result is that concerted effort should be made by policy makers to increase the level of output in Nigeria by improving productivity/supply in order to reduce unemployment and the prices of goods and services (inflation) so as to boost the growth of the economy. Another policy implication of this study is that government should start labor intensive technique of production as against capital intensive and also close the border to some extent which is the likely measure to reduce unemployment and Inflation and increase domestic output level (GDP[52].

An investigation was conducted by some researchers using the Auto Regressive Distributed Lag model approach, the ARDL Bounds Test and Cointegration Test to look at the

relationship between economic growth and unemployment in Nigeria under the Okun's Law framework. Economic growth was also regressed on unemployment, log of commercial output, log of net foreign assets, log of foreign direct investment and increase so as to know the impact of these variables on output. The research findings indicated that prime the Okun's specification does not hold in the Nigeria. The impact of economic growth on unemployment is negative and insignificant. It was however found that there exist a positive impact of unemployment on economic growth, meaning that the phenomena of jobless growth could also be in play in the economy. The Johansen Co-integration test did not establish evidence of long run relationship between GDP, industrial output, unemployment, foreign direct investment net foreign assets and increase . The ECM couldn't be employed because the variables were integrated of different orders. it had been however found there exist a significant positive relationship between the aforementioned variables and GDP except for population growth. The government should consider the Industrial Sector as a priority sector in a bid for better economic growth and development. Social control measures should also be put in play to ensure that the population does not exceed the economic carrying capacity. The govt should also play an important role in abating unemployment in the economy using direct and indirect schemes and strategies[53].

Researchers have also examined the impact of unemployment on the economic process in from 1985 to 2010, using ordinary method of least squares regression technique. The findings revealed that unemployment doesn't have a significant impact on the economic growth of Nigeria. Inflation, however, was found to significantly impact on the economic growth of Nigeria[54]. Similar investigation was administered to determine the impact of unemployment on economic growth in Nigeria using Ordinary least squares multiple regression analytical method in analyzing annual secondary data on gross domestic product, unemployment rate, wage, labour force and population for the amount of 1980 to 2016. The

result reveal that unemployment, population and labour force have significant impact on the country's economic process , while wage rate does not have a significant impact on the country's economic growth. They researchers recommended that government should make sure that there is job creation in the economy especially in the real sector; private sector employers should be given subsidies so as to encourage them to employ more people; and the labour market should be regulated[55].

A researcher also applied applied the multiple correlation models whose estimation co-integrates the inverse relationship between unemployment rate and gross domestic product considering population growth as well. Thus, providing opportunity to assessing other determinants of economic process , (in this case, population growth). The results estimated by the model developed during this research study revealed that since 1970, the rate of growth of unemployment and population has been on the increase amidst declining gross domestic product. The result also reveal that unemployment and increase contribute commensurable to gross domestic product. Furthermore, the result showed that unemployment contributes more to the national gross domestic product during this era in line with existing work[56]. Whereas, other scholars in their study investigated the impact on unemployment on Nigeria economy spanning 1980-2010. The study specified by using GDP as proxy of economic process while unemployment rate was used as proxy for unemployment and control variables used are government expenditure eon health, education and rate of interest . Secondary data were sourced from CBN Statistical Bulletin and Annual abstract of statistics. It employed ordinary least square because the estimation technique and it was found that, unemployment features a negative effect on the gross domestic product (GDP) of the Nigerian economy, while using a similar technique, an examination of the impact of unemployment on the economic growth of Nigeria from 1985 to 2010 was conducted. variable was represented by gross domestic product while independent variable was proxied by unemployment rate with inflation as a

control variable. Secondary data were sourced from CBN statistical Bulletin and National bureau of statistics. It estimated using the standard Least Squares (OLS) and Augmented Dickey-Fuller. Findings revealed that, unemployment doesn't have a significant impact on the economic growth of Nigeria. Inflation, however, was found to significantly impact on the economic process of Nigeria[57].

Having identified unemployment as one of the menace of the contemporary society, especially, in Nigeria, some researchers proceed to seek for ways to combat it by providing understanding about growth of unemployment with consideration for retirement and possible control criterion. The objectives of the study was to formulate a mathematical model using the concept of deterministic model and mathematical epidemiology. The study proposed mathematical model to study the growth in population and set threshold to contain the challenge. The result of the study revealed that the model was mathematically well-pose and biologically meaningful, there exist two equilibria points and and a threshold for recruitment from the pool of unemployment, assuring victory in the fight against unemployment was also obtained. The study concluded that everyone has roles to play to control the socio-menace, beseech government and policy makers to look kindly, create policies to sustain population growth, and the retiree should also, plan live after service, because over dependence on pension scheme could be died before death because of corruption in the scheme[58].

Another researcher carried out an analytical study examining the causes and effects of unemployment on youths and national development in Nigeria. This was motivated by the high number of youths in Nigeria with different productive abilities that can move the nation forward but are unemployed. The study make use of secondary data and observations of the author. It was discovered that the high rate of unemployment in Nigeria has led to a growing number of youths trying all means to leave the shore of the country in search of greener pastures. In addition it was revealed that youth unemployment has forced many of the youths

into “unpalatable activities” such as prostituting, thuggery, hooliganism, drugs addicting and peddling, armed robbery and hired assassin. It was concluded that dome factors such as increasing in population growth, old educational curriculum, economic recession, corruption, non-diversification of the economy, technological advancement are the causes of unemployment. The implication of this according to the researcher is that it result in low income or no income generation, low purchasing power or poor living standard of the citizen which ultimately pushes lots youth to engage in all ill-legal and death calling activities[59].

Further investigations was conducted to look at the nexus between unemployment and economic growth in Nigeria covering a temporal period 1986 to2018. It modelled by specifying GDP rate of growth as a measure of economic growth and unemployment rate as a measure of unemployment while capacity utilization, government expenditure and inflation were used as control variables. Secondary data were sourced from CBN Statistical Bulletin of varied editions and World development indicators. The variables employed were estimated using auto regressive distributed lag (ARDL) for brief and long run relationship. Counting on Okun’s Law theory, the study found that, variables is co-integrated, implying that they move together during a long run. It further revealed that, there exist both short and long term relationship between unemployment and economic growth and that unemployment has an inverse relationship on economic growth in the long run but not significant while the study found capacity utilization to be more significantly impacted on economic growth more than others.

Limited attention has been given to criminal activities in Nigeria especially in the rural areas as a result of the high level of unemployment in the country. This has been regarded as the cost of youth unemployment which was what motivated the the study on rural crimes: the social cost of youth unemployment in Nigeria. The main objective of the study was to examinehow youth unemployment is contributing to ruralcrime in Nigeria. The specific

objective was to was to review the drivers of youth unemployment, trends in youthunemployment, dimensions of rural crime as well as the effectof rural crime on rural livelihoods in Nigeria. The study used secondary data from theNigerian Bureau of Statistics (NBS) from the periodof 2010 to 2020, the study also reviewed literaturefrom journals, articles and internet sources were alsoreviewed. The study found out that population growth, poverty and lackof access to resources influence youth unemployment which fuels crime in rural areas in Nigeria. The increasingnumber of unemployed youth paved way for crime to thrive inrural areas. The study concluded that the absence of employment opportunities in rural areas influences the increasedcriminality which is greatly affecting the livelihoods of rural dwellers in Nigeria. The researcher recommended that infrastructural development and provision of employment opportunities in rural communities will contribute tothe reduction of rural crime in Nigeria[60].

In Southern Africa, the impact of economic growth on unemployment was analyzed using quarterly time series data from 1994-2012. The results of Johansen cointegration reflected that a long run equilibrium or relationship exists among the variables. In ascertaining the consequences of macroeconomic variables thus REER, LP, GDP and BUG on unemployment in South Africa , the study utilized vector error correction model (VECM). The results of VECM indicated that GDP, BUG and REER have positive long term impact on unemployment whilst LP negatively impact unemployment. The study resulted within the following policy recommendation: South African government should redirect its spending towards activities that directly and indirectly promote creation of employment and decent jobs, a conducive environment and versatile labor market policies or legislations without impediments to employment creation should be created, and lastly government should prioritize industries that promote labor intensive. All these may help in absorbing large pools of the unemployed population thereby reducing unemployment in South Africa[61]. Similar

study investigated the trends and impact of unemployment on economic growth in South Africa using quarterly data over the period 1994Q1 to 2016Q4. The variable was proxied by real gross domestic product while unemployment rate was used as the proxy for independent variable. Secondary data were sourced from South African Federal Reserve Bank , The Federal Reserve System economic database and World Bank database. It employed Auto Regressive Distribution Lag (ARDL) bounds test and findings suggest that there's a long run relationship between unemployment and economic growth. The empirical results obtained confirmed that there's a negative relationship between unemployment and economic growth both in the long and short run[62].

Likewise, another researcher conducted an analysis of the impact of economic process on unemployment in South Africa using a secondary quarterly data on macroeconomic variables such as Unemployment rate, Gross domestic product, real effective rate of exchangedeficit and labour productivity for the periods spanning 1994 to 2012. The Johansen Juselius indicates the existence of long-run relationship among the variables. The Vector error correction model results indicate that gross domestic product, deficit and real effective exchange rate have positive long-run impact on unemployment while labour productivity is negatively related to unemployment. It was recommended that South African government should redirect its spending towards activities that directly and indirectly promote creation of employment and decent jobs, a conducive environment and versatile labour market policies or legislation without impediments to employment creation should be created, and lastly government should prioritize industries that promote labour intensive[63].

The effect of unemployment rate on growth rate of GDP in South Africa was examined by relying on quarterly data during the period (the first quarter of 1994– the fourth quarter of 2016) and depending on estimation of Auto Regressive Distribution Lag (ARDL). The study

reached a relation between percentage and growth rate of GDP and a negative effect of unemployment rate on growth rate of GDP in both the long run and the short run[64].

Similar study was conducted in Bangladesh with the aim of investigating the determinants of unemployment in case of Bangladesh using time series data covering the period of 1991 to 2016.Simple descriptive statistics, Augmented Dicky-Fuller (ADF) test and Ordinary Least Square (OLS) methods of analysis were applied in the study. The ADF result revealed that all the variables were stationary at level except urban population growth and that urban population growth became stationary after talking the first difference of this variable. The OLS analysisrevealed that economic growth has insignificant positive impact on unemployment. It was also found that industry inversely affect unemployment and the impact of age dependency ratio on unemployment is found to be statistically inversely significant concluding age dependency ratio as an effective determinant of unemployment. Also, the urban population growth has a negative effect on unemployment[65].

In Jordan, scholars have also examined the effect of unemployment rate on growth rate of GDP of Jordan by depending on yearly data for the period(2009 –2016) as unemployment rate is independent variable, and rate of growth of GDP (A variable of economic growth) as a dependent variable. This study focuses on explaining the literature both in theoretical and empirical ways of the effect of percentage on growth rate of GDP, and analyzing the effect of percentage on growth rate of GDP of Jordan by depending on yearly data for the period (2009 –2016) by using the technique of ordinary least squares in version of E-views. The paper found that there are insignificant impacts of unemployment percentage to total labor pool, unemployment of males percentage to male labor pool , unemployment of females percentage to female labor pool on growth rate of GDP of Jordan by relying on yearly data for the period 2009 to 2016 at level of significance 5%. the study therefore recommended that testing

the impacts of other obstacles in Jordan on rate of growth on GDPso as to know the variables that effect growth rate of GDP in Jordan[66].

Scholars have also investigated the connection between economic growth and unemployment in Eastern European Countries for the period of 1992-2014. In modelling, the study proxied variable by unemployment rate while Gross domestic product was used as the independent variable. Panel Unit Root, Pooled Panel OLS and Panel Johansen Co-integration tests were used respectively and therefore the results showed that the economic growth and unemployment series are stationary at first level. It further revealed that, unemployment affected positively by economic growthin other words 1% rise in GDP will fall the percentage by 0.08% due to Okun's coefficient for Eastern European Countries and there is a co-integration between these important macroeconomic variables[67].

Unemployment relation with growth are examined in FYR Macedonia using VAR approach with a quarterly based data from 2000-2012. It has been observed that no negative relationship between unemployment and economic growth as propounded by Okun's Law and also no direction of causality between unemployment and economic growth[68]. Similarly, some scholars have also investigated the interrelations between economic growth and unemployment rate in Arab countries between 1994 and 2010 adopting the Pooled EGLS (Cross-section SUR). It was found that economic growth had a negative and significant impact on unemployment rate, which means that 1% increase in economic Growth will decrease the unemployment rate by 0.16%[69].

The impact of unemployment rate on growth rate of GDP in Pakistan by relying on annual data for the period from1980 to 2010 by depending on estimation of Auto Regressive Distribution Lag (ARDL). The study found that there's a relationship between unemployment rate and growth rate of GDP in Pakistan in the long run for the period examined by the study[70]. While in Sri Lanka , the connection between unemploment rate and growth rate of

GDP was analyzed by relying on yearly data for the period 1990 to 2012 by depending on Ordinary least squares method. The study reached that rate of growth of GDP has insignificant impact on unemployment rate, but there's bidirectional causality between growth rate of GDP and unemployment in Sri Lanka[71].

2.3.4 The Impact Unemployment rate and Population Growth on GDP

The effect of percentage and population growth rate on gross domestic product was examined using the multiple regression model whose estimation, co-integrate the inverse relationship between percentage and gross domestic product considering population growth as well. Thus, providing opportunity to assessing other determinants of economic growth, (in this case, population growth) to avoid limiting our economic assessment to unemployment rate as reflected in past research work and its inherent short-comings. The results found by the estimated model developed during this research study revealed that since 1970, the rate of unemployment and population has been on the increase amidst declining gross domestic product. The result also reveal that unemployment and increase contribute commeasurably to gross domestic product. Furthermore, the result showed that unemployment contributes more to the national gross domestic product during.[72].

The focus of some other researchers is on analyzing the impact of unemployment rate on growth rate of GDP in Nigeria by relying on yearly data for the period from 1986 to 2015 by depending on estimation of Auto Regressive Distribution Lag (ARDL). The paper reached that there's no relationship between unemployment rate and growth rate of GDP in Nigeria and there is a positive effect of unemployment rate on growth rate of GDP in the third period in the informal sector[73]. Similarly, some scholars have also focused on analyzing the effect of percentage on growth rate of GDP for Greece by relying on yearly data for the period1995 to 2015by depending on estimation of Auto Regressive Distribution Lag (ARDL). This paper

found a relation between percentage and growth rate of GDP in the long run and short run and there is a unidirectional causal effect of unemployment to growth rate of GDP[74].

The effects of debt and GDP on the unemployment rate have been studied by researchers. The study examined talks about the elemental importance of debt and GDP and their effects on the unemployment rate of a country. Their diverse knowledge may be a great benefit for the readers of this paper as it applies multiple areas to the researched topic. Debt ratio data analyses were wont to find a correlation between debt percentage in the different countries and GDP. This helped them to raised analyze the correlation between unemployment rate and GDP. Results of the study showed that GDP features a negative correlation with debt and with unemployment rate. It had been also concluded that deficit on unemployment was a result of the GDP's negative effect (deficit)[75].

An analysis of the influence of Gross Domestic Product growth (GDP) and Inflation rate (INF) on Unemployment rate (UMP) in Ghana's economy using covariance matrix and multiple regression models was carried out by some scholars. In the study, two models were examined separately on the same data of three variables and the different outputs analysed to determine the effectiveness among the two models. The analyses of the outputs highlight the importance of both predictor variables on unemployment rate in Ghana. Scatter plot and normal probability distribution (pnorm) graphs were used to analyse the normality of the predictor variables. Data on rate of inflation and GDP growth spanning from 1991 to 2017 was used. The data was transformed to n X m matrix form for covariance –variance matrix analysis. The rows within the n by m data matrix were the multivariate observations on n units. Multiple correlation analysis was performed on the data. Both methods provided the long-run effects of the two predictor variables on the unemployment rate. However, while multiple correlation model could quantify the effect of each predictor variable on the

predicted variable, the covariance matrix model only quantifies the relation existing between predictor variables and therefore the predicted variable.[76].

2.3.5 The Impact of Inflation on Unemployment

An investigation to work out the effects of unemployment and inflation on economic performance in Nigeria using secondary data on real gross domestic product, unemployment and rate of inflation for period spanning 1981 to 2014 carried out by a researcher. Within the study, co-integration relationship was established among the variables using Johansen Juselius test for co-integration and therefore the OLS result shows that unemployment and inflation rate are positively related to economic growth. It was recommended that government should embark on policy that will reduces the number of imported goods drastically and encourage local production and consumption to encourage domestic industries; these will reduce unemployment and inflation in Nigeria and increase output hence economic growth.[77].

The relationship between inflation and unemployment in 35 OECD countries have been examined using a panel VAR model to analyse the quarterly data used from 1990:1 to 2014:4. It was discovered that the Phillip's curve is still significant in 28 out 35 OECD countries and the coefficients of Okun curve for growth on unemployment were significant only in 13 of these countries. It was concluded that the natural rate of unemployment results from the balance between job creation and destruction processes, reductions in unemployment rates require complementing macro stimulations by microeconomic structural and institutional reforms[78].

In like manner, an examination of the role of inflation and unemployment on economic process in Iran was conducted for the period of 1996 to 2012. The effect of inflation and unemployment on economic process in the short-run and long-run periods were investigated

and examined using Autoregressive Distributed Lag (ARDL) Model. The Model estimation results showed the significant and negative effect of inflation and unemployment on economic growth in long - run, which indicated that inflation and unemployment decreased economic process in long-run. It was suggested that authorities should diligently endeavor plan to reduce, control inflation and unemployment. The study recommended that the result are going to be useful to respected authorities in Iran, especially authorities of economic and social institutions in an effort to reduce and control unemployment and inflation in order to achieve economic growth[79].

The study on Unemployment within the Great Recession: A Comparison of Germany, Canada, and therefore the United States helped us to understand how unemployment has changed during the great recession, which was between December 2007 – June 2009. The questions was addressed by comparing different countries unemployment rates and behaviors during the identical period of time – Great Recession. The study contrasted the experience of the us to the experiences of a large set of OECD (Organization for Economic Cooperation and Development) countries using aggregate labor market data and various other standard economic indicators, they conducted an in depth analysis using rich micro data for the United States and two comparison countries - Canada and Germany. Overall, the study were exploring all possible explanations for the weak market performance of the United States and compare it with the same period market performances of the comparison countries. It was concluded that their international comparison suggests that industrial composition is strongly associated with the labor market impact of the Great Recession and those countries, states and provinces with a pre-crisis construction boom were particularly severely hit by the good Recession crisis. Also, countries whose output decline was mainly driven by a decline in exports ended much better[80].

In Pakistan however, the connection between macroeconomic variables and unemployment was examined using data from 1980-2010 using the VAR Approach. It was discovered from their findings that the variables have more variance contribution to themselves when compared to other variables in the system. rate of inflation contributed to unemployment variance more as compared toeconomic growth, unemployment contributes more to economic process as compared to inflation and unemployment rate has also more variance contribution to inflation as compare to economic growth. In other words, unemployment rate has more variance contribution in both inflation and economic growth rate[81].

2.3.6 Government Efforts

The past Nigerian government's interventional efforts and attempts at addressing the hydra headed problems of unemployment within the country and their effectiveness at encouraging the sense entrepreneurship in the country has been examined with a view to facilitating job creation for the teaming Nigerians job seekers. The study relied on secondary data by way of existing literature for the study while the results of the findings are presented with the help of frequency tables. The finding from the study revealed that several intervention programmes introduced by successive governments within the country had failed to produce the expected results. Findings further indicated a plethora of bottlenecks which are principally hinged on corruptions, bureaucratic bottleneck vis-a-vis inconsistencies in government policies, political instability and lack of entrepreneurial skill by majority of unemployed Nigerians. The study recommended combined diligence on the part of the government to the development of entrepreneurship by providing an enabling environment and infrastructures coupled with the introduction of relevant entrepreneurial educational programmes in all institutions of learning be tailored towards development of entrepreneurial skills while start up loans should be made available without interests[82].

A multiple regression Analysis of Fiscal Strategies and Unemployment rates was conducted with a focus on how full employment levels may be sustained by various means of fiscal stimulus spending. Data from the infrastructure spending, defense spending, net government budget spending, gross private domestic investment (GPI), consumer price level (CPI), money supply (M2) and a refines measure of defense spending with unemployment were used in order to analyse influence on the unemployment rate. In the study, Keynesian approach was applied to gain more significant areas that can be a help to analyze fiscal strategies and unemployment rates. Later applying regression analysis to determine the confidence levels that he then translates into the goodness of fit that then helps to predict the position of the unemployment rate[83].

In addition, government expenditure insignificantly and negatively impacted on economic process both in the short and long run while inflation has insignificant positive and negative impact on economic growth. The study therefore concluded that, though unemployment has relationship with economic process, its effects are negatively insignificant during a long run. The study recommends among others that, for correct policy making, government should endeavor to supply a conducive and enabling environment for business enterprises to strive as it is certain that government can't provide jobs for all; hence, an enabling environment will make people create business ideas and innovation which within the long run can enhance the growth of economy. There's also need for government to formulate policies that will be tailored towards development of informal sector with the motive of SMEs development which can help in reducing the level of unemployment and consequently, improves economic process in Nigeria[84].

2.4 Summary of Gaps in Literature

Studies have been carried our extensively on how unemployment rate influences economic growth rate in different countries with different findings. In the same way, studies have been

carried out to examine the impact of population growth, unemployment and economic growth using various econometric techniques such as OLS, ARDL, VAR and VECM. However, it is important to note that population is a dynamic economic indicator with different aspects such as population growth rate, dependency ratio, working age population, working age dependency ratio and others. There exit only a very few studies on how these influences the rate of employment and economic growth in any country. There is the need to establish a causal relationship between these identified growth of population and unemployment rate in Nigeria. Further, it will also be necessary to add to the body of knowledge by establishing the rate at which unemployment respond to shocks in each of the growth in population which is what motivated this study.

2.5 Conceptual Framework

The framework of this study is based on concepts developed based on the Keynes theory of unemployment which relates unemployment to output and Malthusian theory of population. The Keynesian Theory of unemployment described the relationship between labour, population growth, capital, output and unemployment. Keynes theory broadly examines and explains the strong correlation between the population growth rate and unemployment. The theory states, for the society, population growth rate is major root-cause of raising unemployment levels, therefore, country should have a strong economy and proper and effective policies to reduce high population growth rates.

From this we can observe that labour and population growth determines both output and unemployment whereas, there is a two-way relationship between output and unemployment. This means that output and unemployment affect each other and they are both influenced by population growth, labour and capital. Other factors determining unemployment captured by the Keynesian include high and continuous unemployment benefits, high tax wedges, and

stringent anti-competitive product market regulations as well as monetary policy variables such as interest rate. This relationship is presented in Figure 2.1 below.

Figure 2.1: Framework of the study

Source: Researcher (2020)

From the figure 2.1, as inflation and unemployment affect each other, in the same way, outpu and unemployment affect each other, therefore the same variables that affect output and inflation also affect unemployment. Hence a functional relationship can be expressed showing unemployment and the variables affecting it.

This can be expressed implicitly as

unemp = f(pop, dr ms, inf, yg) (2.1)

Where;

unemp = Unemployement

pop = Population Growth

dr = Dependency Ratio

ms = Money Supply

inf = Inflation Rate

yg = Output Growth

Figure 2.1 depict the conceptual framework for this study where unemployment is the dependent variable while population growth, output, inflation, and money supply are the independent variables.

End Notes

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Chapter Three

Methodology

This chapter presents the methodology used to achieve the objectives of the study. The research design, model specification of the study are presented, the apriori expectation was stated, also the definition and sources of data and variable measurement as well as the estimation techniques.

3.1 Model Specification

The model for this study is based on the conceptual framework above in order to study the relationship between population growth and unemployment. To build the model for the study, the baseline model is gotten from equation 2.1 which expressed unemployment (unemp) as the dependent variable and population growth (pop), money supply (ms), output growth (yg), and inflation as the independent variables. Integrating another variable identified by scholars as a key variable relevant in measuring population which is dependency ratio (dr)[1]. The equation 2.1 can therefore be stated explicitly;

$$unemp_t = \beta_0 + \beta_1 pop_t + \beta_2 dr_t + \beta_3 ms_t + \beta_4 inf_t + \beta_5 yg_t \quad (3.1)$$

Equation 3.1 shows the mathematical form of equation 2.1 where β_0 is the slope of equation 3.1, $\beta_1, \beta_2, \beta_3, \beta_4$, and β_5 are the respective coefficient of pop_t which represents population growth, dr_t which is dependency ratio, ms_t which is money supply, inf_t which stands for inflation rate and yg_t which represents output growth.

To estimate the parameters of Equation (3.1), its stochastic form needs be presented as seen in equation (3.2) where, μ is the stochastic error term;

$$unemp_t = \beta_0 + \beta_1 pop_t + \beta_2 dr_t + \beta_3 ms_t + \beta_4 inf_t + \beta_5 yg_t + \mu_t \quad (3.2)$$

3.2 A priori Expectations

Theoretically, it is expected that pop_thas a positive effect on unemployment because as the total population increases, the unemployment rate tends to rise. The functional relationship between inflation and unemployment can either be positive or negative. In the short-run, according to the Philip's curve, inflation and unemployment are inversely related; as one quantity increases, the other decreases in the long-run, if there is no trade-off. This implies that the unemployment rate is unaffected by inflation in the long run, and the Philip's curve is vertical at the normal rate of unemployment.Also, according to apriori standards, an increase in a output would inevitably result in a decrease in unemployment. This follows okun's law, which stated that as the economy grows and the population grows, unemployment will decrease. Furthermore, increase in money supply will raise the level of investment and thereby boost economic growth. Unemployment will decrease as economic growth accelerates

3.3Requirements and Source For Data

The study will examinethe causal relationship between the population growth and unemployment in Nigeriaand explain the response of Unemployment to shocks in population growth in Nigeria. The research aims to cover the period between 1981 and 2020. The study would be primarily based on secondary data, and the reliability of the results of the study would depend to a large extent on the reliability of the data. The central bank of Nigeria and the world bank's world development indicator will be the source of data for this study[23].

3.4EconometricsTechnique

This subsection presents the techniques employed to achieve the objectives of this study. First, thepre-test of variables, then, the presentation of how objectives one and two were achieved. The

Toda-Yamamoto causality test will be employed for objective one while Vector Auto-regression will be applied for objective two.

3.4.1 Regression Pre-Test

In order to achieve the objectives of this study using the specified model, the variables will be subjected to the test of stationarity using the Augmented Dickey-Fuller test which uses non-parametric statistical methods to take care of theserial correlation in the error terms without adding lagged difference terms.

The co-integration test by Johansen will be then employed to test for the presence of a long-run relationship between the dependent variableand the independent variables. In this test type, the numbers of co-integrating relations will be ascertained via the trace statistics and maximum Eigen statistics.

3.4.2 Model of Analyzing the Causal Relationship Between the Growth in Population and Unemployment in Nigeria

To establish the causal relationship between population growth and unemployment in Nigeria for objective one, the 1995 Toda and Yamamoto causality test will be carried out[4]. Thisutilizes a modified Wald test for restrictions on the parameters of a VAR (k) model (where k isthe lag length in the system). Toda and Yamamoto proved that this test has an asymptoticχ^2 distribution when a VAR (k+ d max) model is estimated (where d max is the maximal order ofintegration suspected to occur in the system). The advantage of this procedure is that it does notrequire knowledge of cointegration properties of the system. This test can be done even if thereis no cointegration and/or the stability and rank conditions are not satisfied.

$$\text{unemp}_t = \beta_0 + \sum_{j=1}^{k+d_{max}} \beta_{1j}\, unemp_{t-i} + \sum_{j=1}^{k+d_{max}} \beta_{2j}\, inf_{t-j} + \sum_{j=1}^{k+d_{max}} \beta_{3j}\, ms_{t-j} + \sum_{j=1}^{k+d_{max}} \beta_{4j}\, yg_{t-j} + \sum_{j=1}^{k+d_{max}} \beta_{5j}\, pop_{t-j} + \varepsilon_{1t}$$

$$pop_t = \delta_0 + \sum_{j=1}^{k+d_{max}} \delta_{1j}\, pop_{t-i} + \sum_{j=1}^{k+d_{max}} \delta_{2j}\, inf_{t-j} + \sum_{j=1}^{k+d_{max}} \delta_{3j}\, ms_{t-j} + \sum_{j=1}^{k+d_{max}} \delta_{4j}\, yg_{t-j} + \sum_{j=1}^{k+d_{max}} \delta_{5j}\, unemp_{t-j} + \varepsilon_{2t}$$

$$dr_t = \delta_0 + \sum_{j=1}^{k+d_{max}} \delta_{1j}\, dr_{t-i} + \sum_{j=1}^{k+d_{max}} \delta_{2j}\, inf_{t-j} + \sum_{j=1}^{k+d_{max}} \delta_{3j}\, ms_{t-j} + \sum_{j=1}^{k+d_{max}} \delta_{4j}\, yg_{t-j} + \sum_{j=1}^{k+d_{max}} \delta_{5j}\, unemp_{t-j} + \varepsilon_{3t}$$

……*(3.3)*

Where the error terms, $\varepsilon_{1t}, \varepsilon_{2t}, and\ \varepsilon_{3t}$ across the different equations and within equations areuncorrelated, d_{max} is the maximum order of integration. The lag length in above threeequationscan be determined by using Akaike Information Criterion (AIC) and Schwarz Bayesian criterion(SBC). In the first equation in equation (3.4), *unemp* granger causes *pop*if β_{3j} for j =1,...,k arenot jointly equal to zero. Similarly, *pop*granger causes*unemp*if δ_{3j} for j=1,...,k are not jointlyequal to zero. Also, *dr* granger causes*unemp*if δ_{3j} for j=1,...,k are not jointlyequal to zero The tests on coefficients are derived by a standard Wald test.

3.4.3 Model for Analysing the Response of Unemployment to Shocks in Population Growth in Nigeria.

To achieve this objective, the study adapts the unrestricted vector autoregressive (VAR) approach developed by Sims in 1980[5] in estimating five-variable VAR models using $unemp_t, pop_t, dr_t, ms_t, yg_t, inf_t$ to provide an empirical insight on the response of unemployment to shocks in population growth in Nigeria. The model is stated as:

$$X_t = u + A_1 X_{t-1} + \ldots + A_p X_{t-p} + u_t \qquad (3.4)$$

Where X_t is an 6×1 vector matrix incorporating $unemp_t, pop_t, dr_t, ms_t, yg_t, inf_t$, as variables; A is a matrix polynomial for the lag operator of considered variables; and u_t is a vector of un-estimated shocks for each of the oil revenue and other controlling variables and

it is assumed to be serially uncorrelated structural disturbance for Var (u_t) = Ω. where Ω is a diagonal matrix, so the structural disturbances are assumed to be mutually uncorrelated.

Endnotes

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Chapter Four

Results and Discussion of Findings

This chapter present the empirical results of this study. The discussion in this chapter starts with the preliminary analysis consisting of descriptive statistics, trend and correlation analysis followed by the pre-estimation tests, where the unit root and co-integration tests were carried out. The chapter also provided some diagnostic tests using some test statistics in order to ensure that the estimated results are reliable for meaningful inferences. The data collected which were subjected to empirical analysis, the results were interpreted and discussed in accordance with the objectives of the study.

4.1Preliminary Analysis

The preliminary analysis presents the trends, descriptive statistics and correlation analysis of the variables for empirical analysis for empirical analysis based on the formulated hypothesis. Facts of the trends of Unemployment (unemp), and Populationgrowth rate (pop) and Dependency Ratio (dr) as well as other macroeconomic variables including Money supply (ms), Inflation (inf) and Output Growth (yg) are presented using trends and summary statistics.

4.1.1 Presentation of Descriptive Statistics

Table 4.1 Descriptive Statistics

	UNEMP	POP	DR	INF	MS	YG
Mean	4.534862	2.581738	89.01785	19.14646	23.2826	3.149929
Median	3.99	2.585689	88.38973	12.55496	19.41171	4.195924
Maximum	8.53	2.70983	92.76325	72.8355	87.76135	15.32916
Minimum	3.7	2.488792	86.61516	5.388008	-0.794167	-13.1279
Std. Dev.	1.48341	0.066913	2.027432	17.06283	18.10734	5.467388
Skewness	2.132364	0.107075	0.559597	1.783591	1.453167	-0.86651
Kurtosis	5.780734	1.748076	1.899211	4.997667	5.684279	4.635269
Jarque-Bera	31.32046	2.621407	4.004536	27.16262	25.43472	9.225836
Probability	0	0.26963	0.135029	0.000001	0.000003	0.009923
Sum	131.511	100.6878	3471.696	746.712	908.0213	122.8472
Sum Sq. Dev.	61.61412	0.170138	156.1983	11063.33	12459.27	1135.909
Observations	29	39	39	39	39	39

Source: Author's Computation using Eviews 10, (2022)

The table 4.1 above presents a summary of descriptive statistics of the variables in this study which includes unemployment rate (unemp), population growth rate (pop), dependency ratio (dr), inflation rate (inf), money supply (ms), and output growth (yg). It showed that the mean value of unemployment is 4.53% with the highest and lowest value at 8.53% and 3.7% in 2013 and 2017 respectively and a standard deviation of 1.48%. The average population growth rate is 2.58% with a standard deviation of 0.066%. The highest and lowest rate of population growth as shown in the table is 2.7% in 1981 and 2.49% in 1997 respectively. The average rate of inflation (inf) within the period under study is 19.15% with its highest and lowest value at72.83% in 1995 and 5.38% in 2007 respectively. The mean of money supply (ms) is 23.28%, where its highest and lowest value is 87.76 in 2007 and -0.79 in 2014 respectively. In regards to the output, the average size of output (GDP) growth3.15% which represent the average rate of growth in economic activities carried out in Nigeria within 1981 to 2019. The maximum and minimum rates are15.33% in 2012 and -13.13% in 1981

respectively. In addition, the average value of dependency ratio (dr) stays at 89.02%, while the maximum and minimum values stood at 92.76% in 1987 and 86.62% in 2015 within the specified periods.

Furthermore, the standard deviation reports the rate at which the variables deviate from their individual mean values. The variable that has highest deviation rates in varying magnitude from their mean values is inflation rate at 17.06% while the variable with the lowest deviation value is population growth rate which stood at 0.067%. More so, output growth skewed negatively with a value of -0.86651, while other indicators skewed rightward. Additionally, the Kurtosis identified 3.0 as a point for variables that are normally distributed. From the Table 4.1, none of the variables exhibits normal distribution as they are found to be platykurtic. The economic implication is that there is presence of outliers in the values of some variables, indicating some level of asymmetry and discreteness in the data sets.

4.1.2 Graphical Trend Analysis of Variables

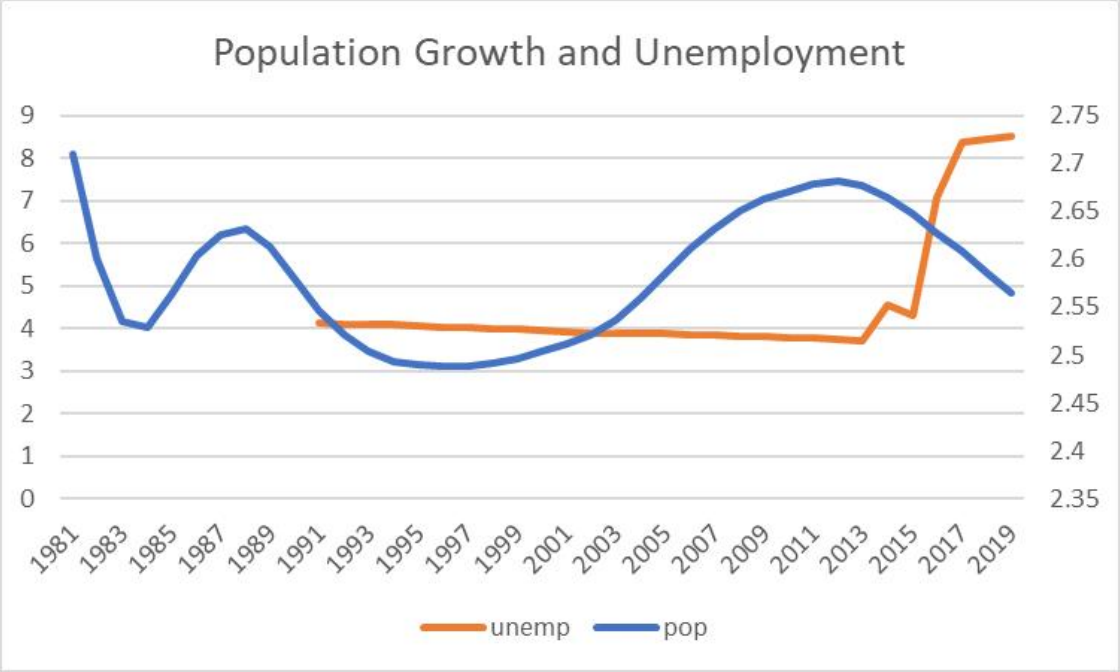

Figure 4.1 Population Growth and Unemployment from 1981 to 2019
Source: Author's Computation, (2022)

The figure 4.1 above present a trend movement of population growth (pop) and unemployment rate (unemp) in Nigeria between 1981 and 2019. From the figure it was observed that the population growth rate maintained a steady growth of 2% all through the period under observation, with the highest being 2.7% in 1981 and the lowest being 2.4% in 1997. On the other hand, the unemployment rate has maintained a steady fall from 1991 till 2016 followed by a sharp increase in 2014 and since then have maintained a steady increase. This is caused by the failure of government to meet its target of creating a minimum of 1.5 million jobs required for the period to keep the unemployment rate constant at 10.4 per cent before the end of December 2015 worsened the unemployment situation. The consequence of this is that many young Nigerians emigrated in search of jobs which account for a sharp and continuous fall in population growth in Nigeria.

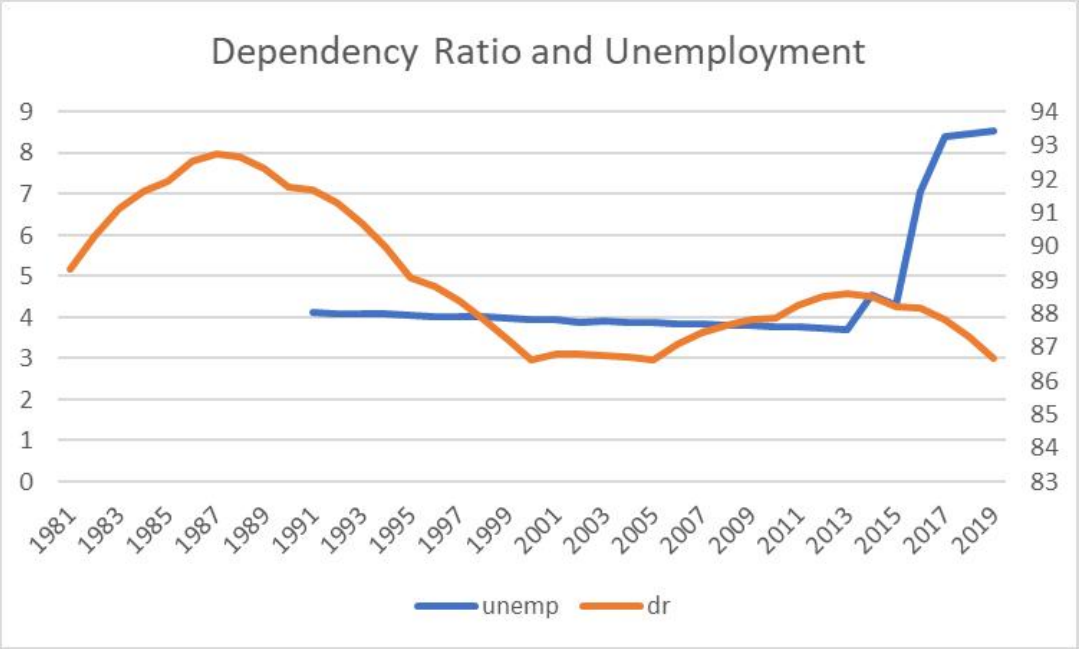

Figure 4.2Dependency Ratio and Unemployment from 1981 to 2019

Source: Author's Computation, (2022)

The figure 4.2 above shows the trend movement of dependency ratio (dr) and unemployment rate (unemp) in Nigeria between 1981 and 2019. It can be observed from the figure 4.2 that dependency ratio ranges from 92.7% to 86.61% within the periods under study as depicted on the secondary axis of the graph. The highest being 92.7% in 1987 and the lowest 86.61% in 2005. Compared to figure 4.1 it can be inferred that where both dependency ratio and population growth rate begin to fall from 2013, unemployment rate begins to climb with its all time high in 2019 of 8.52%. Furthermore, from 2015, there exist a downward pressure on dependency ratio as unemployment begins to rise.

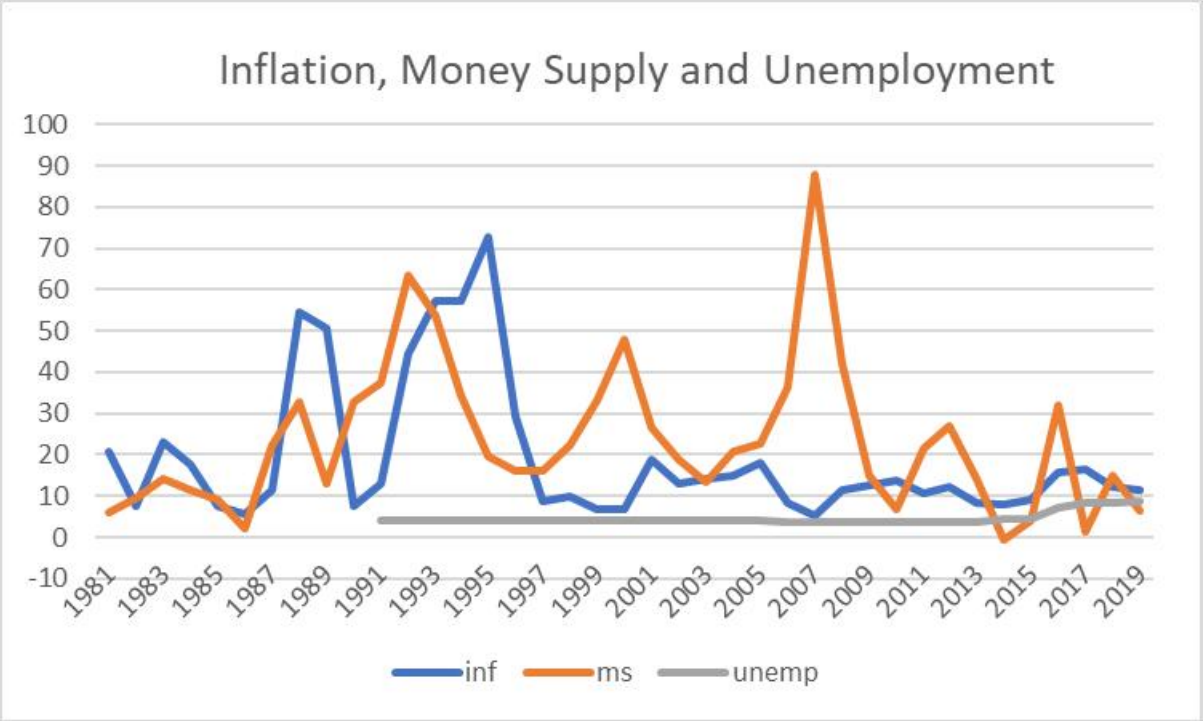

Figure 4.3Inflation Rate, Money Supply and Unemployment from 1981 to 2019
Source: Author's Computation, (2022)

Figure 4.3 presents the graphical illustration of key macroeconomic variables. The chart revealed the trend pattern of inflation rate (inf), money supply (ms) and unemployment rate (unemp). It was observed that variations in inflation and money supply have little or no influence on unemployment up till 2014 where there is a sharp increase in money supply and inflation which was also followed by an increase in unemployment rate. However, in 2018 and 2019, money supply and inflation rate took a dive whereas unemployment rate continue to rise.

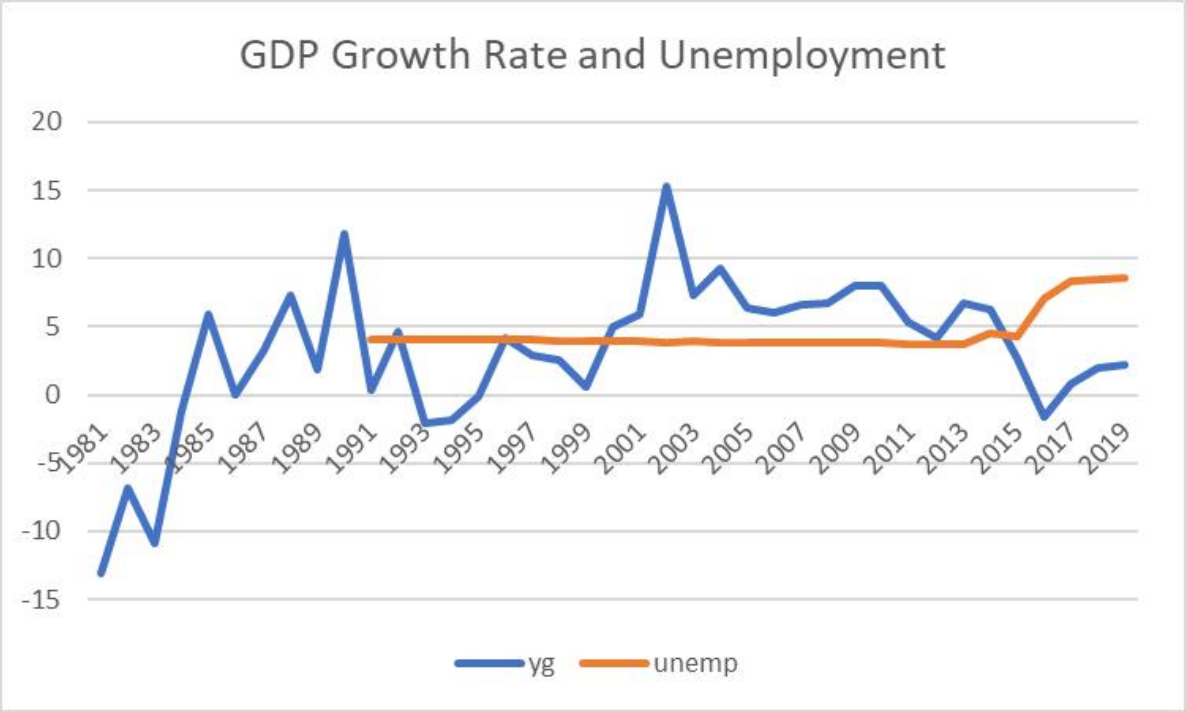

Figure 4.4GDP Growth Rate and Unemployment from 1981 to 2019
Source: Author's Computation, (2022)

Figure 4.4 depict the flow chart of output growth rate and unemployment rate in Nigeria between 1981 and 2019. From the figure, it can be observed that output growth rose from a negative growth in 1981 to to positive growth in 1985. It maintained a steady positive growth between 2000 and 2013 with its all time high in 2002 of 15.3% during the period when unemployment rate maintained a rate of 3%. However, from 2014 when unemployment begins to rise, output growth have followed a down trend and have been dwindling below 2% since the n while unemployment continue to rise.

4.1.3 Correlation Analysis

Table 4.2: Correlation Matrix

Correlation	UNEMP	POP	DR	INF	MS	YG
UNEMP	1	0.070364	-0.152897	-0.085748	-0.302401	-0.384915
POP		1	-0.141697	-0.466074	-0.190054	0.277661
DR			1	0.566281	0.277761	-0.497264
INF				1	0.189139	-0.442773
MS					1	-0.104462
YG						1

Source: Author's Computation using Eviews 10, (2022)

The table 4.2 presents the correlation analysis of the level of association between unemployment and population growth including macroeconomic indicators for the empirical study between 1980 and 2019. The degree of the various relationship of population growth including other macroeconomic indicators and unemployment level variables are weak and negative with the exception of population growth rate and unemployment, money supply and dependency ratio, economic growth and population growth rate and inflation and money supply which exhibit weak and positive relationships. However, the inflation and dependency ratio shows moderate and positive relationship. In summary, the correlation values suggest the absence of perfect multicollinearity among the predictive variables, as positive and negative relationships were reported among the variables of interest in varying magnitudes and signs.

4.2Pre-Estimation Tests

This study presents the pre-estimation tests of the variables. Before presenting the findings of the stated objectives, pre-estimation tests were carried out in terms of stationarity and cointegration tests and presented first in order to determine the appropriate estimation technique to use for the empirical analysis.

4.2.1Unit Root Test

The pre-estimation test used examine the stationarity level of individual variables is the Augmented Dickey Fuller (ADF). It indicates whether the variables are stationary or non-stationary. This permits this study to determine the stationary level of the the variable under study in order to suggest the appropriate technique to estimate the parameter coefficients. Intercept and trend model were used to statistically find the significance of the variables at 1%, 5% and 10% critical point at levels and first difference. Furthermore, it should be noted that the lag length for ascertaining this stationarity level of our variables as well as unit-root test is automatic and optimally chosen by the Schwarz-Bayesian Information Criterion (SIC).The results of the unit root tests for the variables are summarized in the table below.

Table 4.3 Summary of the ADF Test

Variable Series	At Levels		At First Difference		Order of Integration
	ADF Test Statistics	Test Critical Values	ADF Test Statistics	Test Critical Values	
Unemployment Rate (unemp)	-9.373 ***	-4.374			I(0)
Population Growth Rate (pop)	-4.339 ***	-4.297			I(0)
Inflation Rate (inf)	-4.020 **	-3.537			I(0)
Dependency Ratio (dr)			-5.577 ***	-4.273	I(1)
Money Supply (ms)			-6.531 ***	-4.227	I(1)
GDP Growth (yg)	-3.982 **	-3.533			I(0)

Note: *** significant at 1%; ** significant at 5%;. Calculated at trend and intercept and lag lengths selected automatically using the Schwarz Info Criterion (SIC).
Source: Author's Computation using Eviews 10, (2022)

The unit root test results are summarized in the table 4.3 using the Augmented Dickey Fuller (ADF) Test. The result indicated that Dependency ratio (DR) and Money supply (MS) were discovered to oppose the null hypothesis, that is, not stationary at the 1% and 5% level of significance at levels. These variables were subjected to further test at first difference where they were found to be significant at 1% significant level. The implication of this is that the statistic of the variable were stationary and integrated of the first order, hence a long-run equilibrium convergence.

Furthermore, all other variables of interest were found to be stationary at levels, where Unemployment rate (UNEMP), and Population growth rate (POP) were found to be stationary 1% level of significance while Inflation rate (INF) and GDP growth rate (YG) were found to be stationary at 5% level of significance. The results suggest that at levels, the statistic of the variables were stationary and integrated of order zero, which imply that the variable converges to its long-run equilibrium or true mean at levels.

A maximum of two lags was imposed on the variables. This choice is based on Akaike's Information Criterion (AIC) to select the optimum number of lags as shown in the table below

Table 4.4VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-413.1824	NA	77630.55	31.12462	31.46058	31.22452
1	-220.1469	271.6796	2.051146	20.45532	23.14298	21.25451
2	-111.2119	96.83108*	0.057390*	16.01570*	21.05506*	17.51416*

Source: Author's Computation using Eviews 10, (2022)

4.3. Data Analysis and Interpretation

4.3.1 Result of Causal Relationship Between Population Growth and Unemployment

This subsection presents the result of the first objective which is to investigate the causal relationship between population growth and unemployment in Nigeria. To achieve this, the Toda-Yamamoto (TY) causality test was carried out. This was because variables included were observed to be a mixture of I(0) and I(1). Hence, to run the TY causality estimation, there is need to obtain the optimum lag length. The lag length was obtained based on Akaike's Information Criterion (AIC) after running a VAR (2) model for the variables. From the VAR (2) result, the lag length criteria test was carried out. Based on the AIC, lag 2 was chosen as the maximum lag length as shown in table 4.4.

Furthermore, there is the need to test for serial correlation among the variable of study before proceeding to carry out the causality test. The diagnostic portmanteau test checking of the fitted model. This test use autocorrelation or partial autocorrelation in the residuals to criticize the adequacy of fitted model. The main idea underlying these portmanteau tests is to identify if there is any dependence structure which is yet unexplained by the fitted model.

Table 4.5 Portmanteau Autocorrelation Test

Test	Q-Stat	Probability
Serial Correlation	216.7551	0.0000

Source: Author's Computation using Eviews 10, (2022)

The table 4.5 shows the presence of serial correlation among the variable of interest given that the probability of the Q-Stat is significant at 1%. However, this was not able to be corrected because of the length of data which is one of the limitations of this study.

Proceeding to the causality test, the result of the Granger causality test based on Toda Yamamoto procedure is reported below in table 4.6 which depict the causal relationship between unemployment, other macroeconomic variables and population growth as shown below.

Table 4.6 Granger Causality Results based on TY Procedure

Dependent Variables	Independent Variables							Direction of Causality
	UNEMP	POP	MS	INT	INF	YG	DR	
UNEMP		3.394474	**9.462559**	0.782980	1.067893	**7.128412**	3.253497	MS, YG → UNEMP
		(0.1832)	**(0.0088)**	(0.6760)	(0.5863)	**(0.0283)**	(0.1966)	(one-way causality)
POP	**19.80290**		**18.44652**	3.512821	2.931046	2.586057	**10.56846**	UNEMP, MS, DR → POP
	(0.0001)		**(0.0001)**	(0.1727)	(0.2310)	(0.2744)	**(0.0051)**	(one-way causality)
MS	1.062108	**6.355627**		3.598898	0.329121	2.649669	0.645072	POP → MS
	(0.5880)	**(0.0417)**		(0.1654)	(0.8483)	(0.2658)	(0.7243)	(one-way causality)
INT	0.148842	**11.57965**	**8.997010**		0.647443	3.357729	**11.31914**	POP, MS, DR → INT
	(0.9283)	**(0.0031)**	**(0.0111)**		(0.7235)	(0.1866)	**(0.0035)**	(one-way causality)
INF	0.035694	**16.64234**	**4.680196**	**5.374309**		**5.772882**	3.783711	POP, MS, INT, YG→ INF
	(0.9823)	**(0.0002)**	**(0.0963)**	**(0.0681)**		**(0.0558)**	(0.1508)	(one-way causality)
YG	2.857631	**11.64812**	**11.39280**	3.469019	0.933522		1.036495	POP, MS → YG (one-way causality)
	(0.2396)	**(0.0030)**	**(0.0034)**	(0.1765)	(0.6270)		(0.5956)	
DR	1.582329	3.841157	**10.96228**	2.403126	1.666950	**9.549581**		MS, YG → DR (one-way causality)
	(0.4533)	(0.1465)	**(0.0042)**	(0.3007)	(0.4345)	**(0.0084)**		

Note: Values in parenthesis are probability values. The bolded values are found statistically significant at 1%, 5% and 10% significance level.

Source: Author's Computation using Eviews 10, (2022)

The result in table 4.6 revealed unemployment (unemp), money supply (ms) and dependency ratio (dr) cause population growth, however, there was found a return causality from population growth (pop) to money supply (ms). It was also observed that a one-way causal link from dependency ratio (dr) to money supply (ms) and output growth (yg). This result is related to the feedback from unemployment (unemp) to money supply (ms) and output growth (yg). Population growth represented by population growth rate and dependency ratio, both are found not to cause unemployment, on the other hand, unemployment and dependency ratio are found to cause population growth rate. For other macroeconomic variable, inflation shows uni-directional causal feedback to population growth (pop), money

supply (ms), interest rate (int) and output growth (yg). The causality test also shows that population growth (pop) and money supply (ms) cause interest rate and output growth in a one-way causality. It is also important to note that there is no feedback response from inflation to all the variables under observation.

4.3.2 Result of the Analysis of the Response of Unemployment to Shocks in Population Growth in Nigeria

The second objective is to analyze the response of unemployment to shocks in population growth. This response is presented in this section. Two econometric analysis was conducted, which are the impulse response (IR) and the variance decomposition analysis (VDA) to examine the response of unemployment to shocks in dependency ratio and population growth rate. The estimates and figures from the techniques of analysis are reported, interpreted and discussed based on earlier reported findings in previous studies.The Impulse Response Function (IRF) was generated from the unrestricted VAR model to trace the response of one endogenous variable (unemployment) to one standard shock in another variables and this can be thought of as a type of dynamic multiplier.

The figure 4.5 depicts the impulse response function plot of unemployment to shocks from population growth and other macroeconomic indicators using a period of ten (10). The response of other variables to shocks in macroeconomic variables are presented in the appendix.

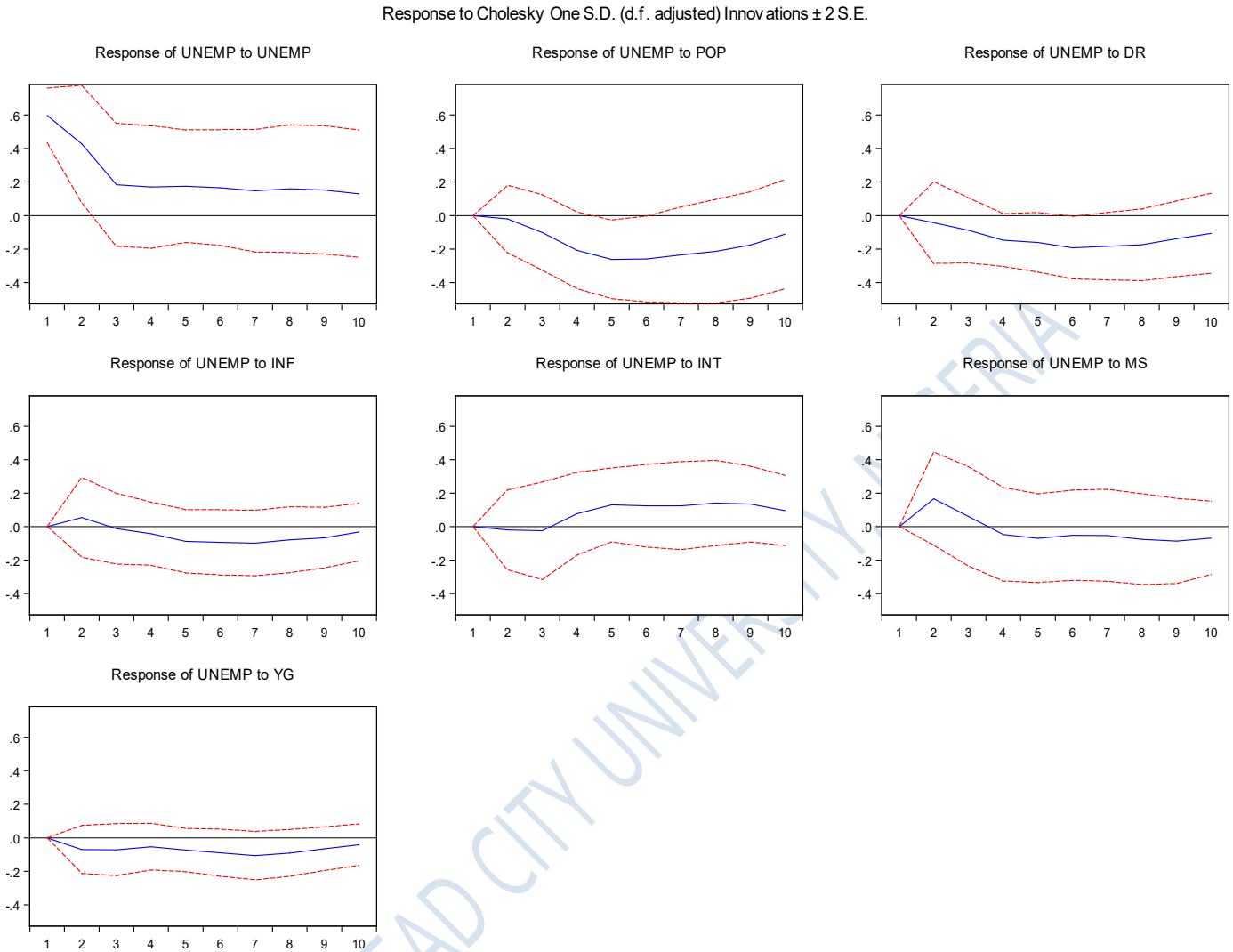

Figure 4.5: Impulse Response Graphs of Unemployment to Shocks in Population Growth

Source: Author's Computation using Eviews 10, (2022)

The figure 4.5 presents the response of unemployment (unemp) to shocks in population growth rate (pop), dependency ratio (dr), inflation (inf), interest rate (int), money supply (ms) and output growth (yg). A period of ten years was examined for this response. The analysis revealed that the current unemployment significantly respond to one standard deviation of its own shocks all through the 10period. In the first to third period, unemployment responds negatively to one standard deviation shocks exerted on unemployment changes in Nigeria. It later converge as the response to changes in unemployment is relatively stable. The implication of this is that unexpected changes in the overall unemployment during those

period tend to significantly influence changes in itself in the short run in the Nigerian economy.

The shocks from population growth, starting with population growth rate, unemployment responded negatively to shocks in population growth rate in the first to the sixth period and then afterwards begin to rise. This response of unemployment to the second measure of population growth which is dependency ratio is similar to that of shocks exerted from population growth rate. However, the shock of population growth rate is more visible compared to dependency ratio. This indicate that unexpected changes in population growth significantly influence the changes in unemployment during the periods in the Nigerian economy.

For other macroeconomic variables, the response of unemployment to shocks from inflation is similar to money supply where there is a sharp positive response in the first and second period followed by a sharp negative impact from the third period and then maintained a low response from the fourth period. The response from output growth is negative and relatively low all through the ten periods. However, the sharp positive rise is more visible in money supply in the first two periods. As for interest rate, the response of unemployment to shocks in interest rate is such that there is no response for the first and second periods and subsequently responded positively for the remainder of the periods.

To complement the impulse response analysis, the variance decomposition test is carried out. This indicates the the amount of the forecast error variance of each of the variables can be explained by exogenous shocks to the other variables. The impulse reaction functions trace the effects of a shock to one endogenous variable on the other variables in the VAR, whereas, Variance Decomposition separates the variation in an endogenous variable into the component shocks of the VAR. Hence, the variance decomposition provides information

about the relative importance of each random innovation in affecting the variables in the VAR system.

Table 4.7 presents the result of the variance decomposition test of unemployment to shocks in population growth and other macroeconomic variables. The table presents separate variance decomposition for each endogenous variable. The second column, labeled “S.E”, contains the forecast error of the variable at the given forecast period. The source of this forecast error was the variation in the current and future values of the shocks to each endogenous variable in the VAR. The other columns for each of the macroeconomic variables give the percentage of the forecast variance due to each shocks, with each row adding up to 100. Also, the forecast period of 10 years is selected but split into short-run and long-run where 1 to 5 years is considered short-run while 6 through 10years is the future or long-run

Table 4.7: Result of Variance Decomposition Analysis

Period	S.E.	UNEMP	POP	MS	INT	INF	YG	DR
1	0.596904	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.760053	93.36324	0.075201	4.830338	0.068336	0.506852	0.846575	0.309462
3	0.799410	89.64767	1.706264	4.936156	0.157757	0.482343	1.556559	1.513249
4	0.863644	80.66539	7.288660	4.519999	0.931202	0.657302	1.714673	4.222779
5	0.951661	69.80682	13.58622	4.256861	2.635108	1.386391	2.015100	6.313494
6	1.035835	61.50073	17.76827	3.839601	3.663665	2.003112	2.455097	8.769518
7	1.105989	55.72796	20.11850	3.593236	4.479240	2.545368	3.089595	10.44610
8	1.168364	51.79943	21.36510	3.642361	5.470245	2.737890	3.373256	11.61172
9	1.213472	49.59112	21.91174	3.885925	6.292132	2.833940	3.417705	12.06744
10	1.236841	48.84004	21.90622	4.039129	6.655976	2.795459	3.399041	12.36413

Cholesky Ordering: UNEMP POP MS INT INF YG DR

Source: Author's Computation using Eviews 10, (2022)

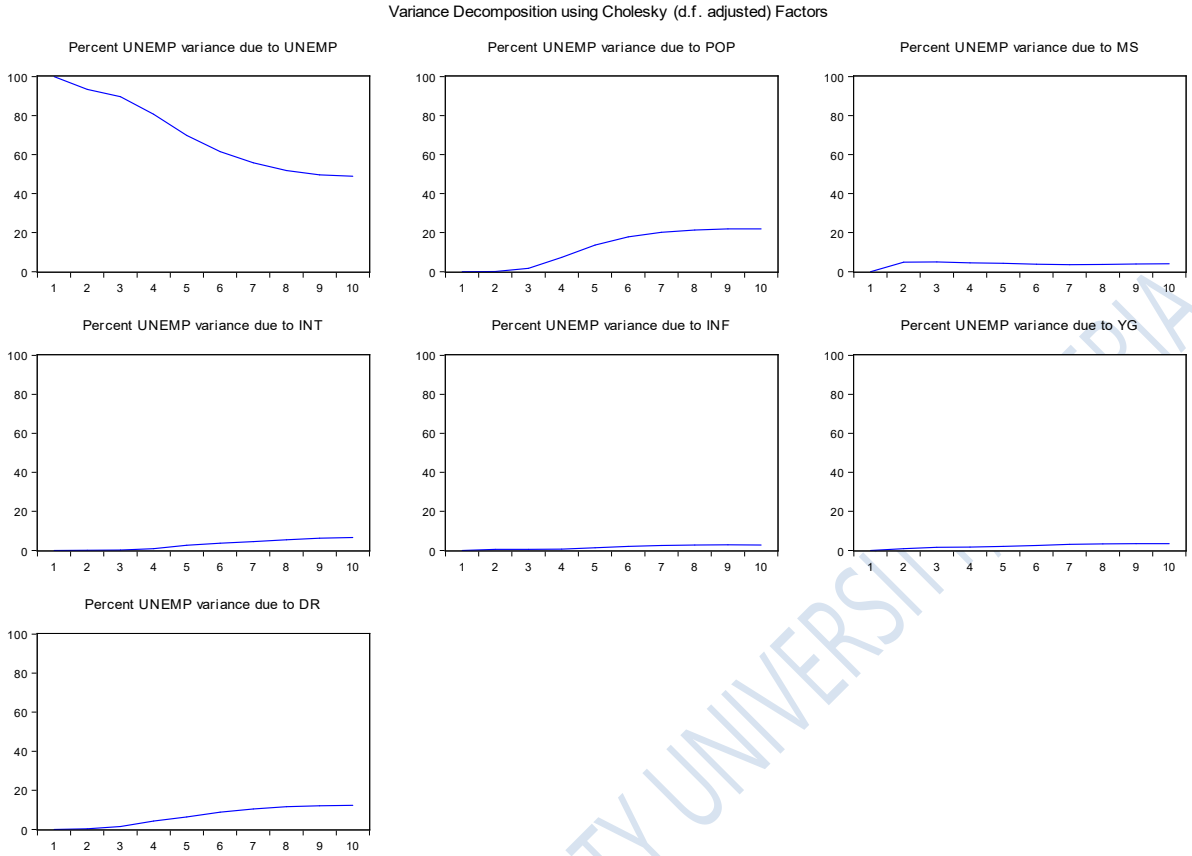

Figure 4.6: Variance Decomposition Graph of Unemployment to Population Growth and other Macroeconomic Variables

Source: Author's Computation using Eviews 10, (2022)

The table 4.7 shows that in the first period, shocks in unemployment rate was 100% responsible for the variation that occurred in the rate of unemployment. Subsequently, the percentage variation that shocks in unemployment rate is responsible for continue to diminish throughout the periods under study. This is as a result of other factors that claimed responsibility for some of the variations in other periods. In the second period, shocks in unemployment is responsible for 93% of variations in unemployment rate while money supply is responsible for 5% of the variations in unemployment rate. It is however clear from the table that shocks in unemployment mostly account for variation in itself. The population growth rate and dependency ratio also account for variations in unemployment rates. Their influence became more significant from the fifth period. Shocks in population growth rate account for 20% in the seventh period and continue to grow from thenceforth. Similarly,

shocks in dependency ratio account for 10% of the variation in unemployment rate in the seventh period and continue to increase from thenceforth.

It can also be observed from the table 4.7 that apart from the unexpected variations in unemployment, shocks in the population growth variables account for a larger proportion of variations in the unemployment rate in Nigeria. In the tenth period for example, unexpected changes in unemployment, population growth rate, dependency ratio, interest rate, money supply, output growth and inflation account for 49%, 22%, 12%, 7%, 4%, 3% and 3% respectively. The implication of this is that shocks in population growth is only responsible for variations in unemployment rate in the long run, however, it is important to note that population growth rate account for a higher variation compared to dependency ratio. Whereas, in the short run, the variations in the rate of unemployment is mostly caused by shocks in itself. Looking at the other macroeconomic variables including money supply, inflation rate, interest rate and output growth their influence are rising from one period to another even though the influence is weak, there is the likelihood of predicting the rate of unemployment in the future.

4.4 Discussion of Findings

This study focused on the connections between population growth and unemployment rate in Nigeria with the objective of investigating the causal relationship between the growth of population and unemployment and to analyze the response of unemployment to shocks in population growth in Nigeria.

The first objective was to investigate the causal relationship between population growth and unemployment rate in Nigeria. Findings from empirical analysis shows that there is no direct causality between unemployment and population growth and also dependency ratio. However, it was discovered that money supply and output growth exhibit a one-way causality with

unemployment as well as dependency ratio. It was also discovered that there is a bi-directional causality between money supply and population growth rate. Whereas, unemployment rate and dependency ratio exhibits a uni-directional causality to population growth rate. A close observation also reveal an indirect causality where dependency ratio cause population growth rate, while population growth rate cause output growth and output growth cause unemployment.

The findings of this study negates the discoveries of the research work on Population Growth and Unemployment in Zanzibar which discovered the presence of unidirectional Granger causality from population growth to unemployment[1]. Similarly, scholars have also examined the dynamic effect of population growth on unemployment rate in Nigeria. It was found that there exist a direct relationship between population growth and unemployment rate[2]. Similar study analyzed the causal relationship between population growth and unemployment in Nigeria between 1990 and 2018.Empirical evidence from the study using the Pairwise Granger Causality test revealed bidirectional causality between unemployment rate and population growth. A unidirectional causality was also discoveredunemployment and output growth in a related study that explored how population growth impact unemployment rate in Nigeria[3]. It was discovered that there is a positive and bidirectional relationship between population growth and development in Nigeria, meaning that they granger causes each other[4].

The second objective was to analyze the response of unemployment to shocks in population growth in the Nigerian economy. Findings from the analysis shows that the responsiveness of unemployment rate to shocks from within itself followed by population growth and dependency ratio. It was discovered through the variance decomposition that shocks in unemployment account for 100% variation in unemployment rate in the first period and 93% in the second period. While shocks in unemployment maintained a dominant factor responsible for changes in unemployment rate, the rate of variations explained continue to

diminish all through the periods. From the ninth period, more than 50% of the variations in unemployment rate are explained by shocks in variables outside unemployment. Population growth account for more variations compared to other macroeconomic variables with population growth rate accounting for 21% and dependency ratio accounting for 12% variations. The implication of this is that shocks in unemployment account for the most variations in unemployment rate, whereas in the long run, other variables account for the most variations with population growth being responsible for the most variations. It is also important to note that the responsiveness of unemployment to population growth rate higher than that of dependency ratio in the long run.

The findings of this study supports that of some scholars exploring the effect of population growth on unemployment in Tanzania. The study discovered that in the long run, population growth contribute positively to increase the unemployment problem[5]. Similar study that investigated the effect of the growth of population on unemployment rate in Nigeria, with specific focus on determinant of unemployment and the impact of macroeconomic policies on unemployment. The result revealed that impulse of economic growth to unemployment, shows that for a one standard deviation shock, the unemployment oscillate from positive to negative between 1st and sixth period but consistently become negative from seventh till the tenth period. More also, impulse of exchange rate to unemployment, show that a one standard deviation shock, makes the unemployment to be positive throughout the entire periods[6].

Endnotes

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Chapter Five

Conclusion

This chapter of the study provides a summary of the major findings, conclusion, recommendations, suggestions for further studies and limitation of the study prior to the concluding remarks.

5.1 Summary of Findings

Several scholars have carried out studies with the aim of unraveling the nature and causes unemployment and its impact on a country's economy. In the case of Nigeria, the prevailing unemployment rate is so high that it will take concerted efforts to address it. It was observed that the unemployment situation in Nigeria is alarming and even more disheartening because an optimal proportion of the country's labour force can not be absorbed by the prevailing economic condition of the country. This scenario has led to the recent upsurge in crimes rate and other social vices as witness in our society. To be able to address this problem, a thorough understanding of the dynamic and interplay between population and unemployment is highly required. It is on this premise that this study investigate the interaction between unemployment and population spanning through the period of 1981-2019. The broad objective of this study is to investigate the nature and extent of the relationship between the growth in population and unemployment level in Nigeria between 1981 to 2020, while the specific objectives are to investigate the causal relationship between the growth in population and unemployment in Nigeria; and analyze the response of Unemployment to shocks in population growth in Nigeria. The findings of the specific objectives were reported in the previous chapter.

The findings from the trend patterns of the variables of interest did not present a clear or exact relationship between unemploymentrate and population growth as well as other

macroeconomic variables whether it is direct or indirect. However, it was observed that where both dependency ratio and population growth rate begin to fall, unemployment rate begins to rise. With regards to key macroeconomic variables, it was observed that variations in inflation and money supply have little or no influence on unemployment up till 2014 where there is a sharp increase in money supply and inflation which was also followed by an increase in unemployment rate. However, in 2018 and 2019, money supply and inflation rate took a dive whereas unemployment rate continue to rise. In addition, during the period when unemployment rate maintained a rate, output growth also maintained a steady positive growth. However, from 2014 when unemployment begins to rise, output growth have followed a down trend and have been dwindling below 2% since the n while unemployment continue to rise.

The descriptive statistics of the variables was also presented which shows that none of the variables exhibits normal distribution as they are found to be platykurtic. The economic implication is that there is presence of outliers in the values of some variables, indicating some level of asymmetry and discreteness in the data sets. Furthermore, the unit root results revealed that majority of the series are stationary at levels, only few became stationary after the first difference.

With a focus on the interaction between population growth and unemployment rate in Nigeria, empirical analysis were carried out with respect to each of the specific objectives. The first objective was to investigate the causal relationship between population growth and unemployment rate in Nigeria. To achieve this, the Toda-Yamamoto (TY) Granger causality test was carried out. This is because variables included were observed to be a mixture of I(0) and I(1).

The findings from the analysis shows that there is not direct causality between unemployment and population growth rate and dependency ratio. The result indicated that money supply and output growth exhibit a one-way causality with unemployment. The same causal relationship was found between money supply and dependency ratio. It was further discovered that there exist a bi-directional causality between money supply and population growth rate. Whereas, unemployment rate and dependency ratio exhibits a uni-directional causality to population growth rate. Furthermore, the study revealed that an indirect causality where dependency ratio cause population growth rate, while population growth rate cause output growth and output growth cause unemployment..

The second objective was to analyze the response of unemployment to shocks in population growth in the Nigerian economy. In order to achieve this, two econometric analysis was conducted, which are the impulse response (IR) and the variance decomposition analysis (VDA). The Impulse Response Function (IRF) was generated from the unrestricted VAR model to trace the response of one endogenous variable (unemployment) to one standard shock in another variables and this can be thought of as a type of dynamic multiplier. It was revealed from the impulse response analysis that the current unemployment significantly respond to one standard deviation of its own shocks all through the 10 period. The implication of this is that unexpected changes in the overall unemployment during those period tend to significantly influence changes in itself in the short run in the Nigerian economy. The shocks from population growth rate is revealed to cause negative impact on unemployment from the first to the sixth period and then afterwards begin to rise. This response of unemployment to dependency ratio is similar to that of shocks exerted from population growth rate. However, the shock of population growth rate is more visible compared to dependency ratio. This indicate that unexpected changes in population growth

significantly influence the changes in unemployment during the periods in the Nigerian economy.

For other macroeconomic variables, the response of unemployment to shocks from inflation is similar to money supply where there is a sharp positive response in the first and second period followed by a sharp negative impact from the third period and then maintained a low response from the fourth period. The response from output growth is negative and relatively low all through the ten periods. However, the sharp positive rise is more visible in money supply in the first two periods. As for interest rate, the responsiveness of unemployment to shocks in interest rate is such that there is no response for the first and second periods and subsequently responded positively for the remainder of the periods.

It was discovered through the variance decomposition that shocks in unemployment account for most of the variations in itself in he short run while in the long run, other variables combined are the major contributor to the variations in unemployment rate in Nigeria. Population growth account for more variations compared to other macroeconomic variables with population growth rate accounting for 21% and dependency ratio accounting for 12% variations. The implication of this is that shocks in unemployment account for the most variations in unemployment rate, whereas in the long run, other variables account for the most variations with population growth being responsible for the most variations. It is also important to note that the responsiveness of unemployment to population growth rate higher than that of dependency ratio in the long run.

5.2 Conclusion

This study investigated the interaction between unemployment rate and growth in population in Nigeria. The objectives were to investigate the causal relationship between the growth in

population and unemployment in Nigeria; and analyze the response of Unemployment to shocks in population growth in Nigeria.

From the findings of the study, it can be concluded that,

i. Money supply and output growth cause unemployment

ii. Unemployment, money supply and dependency ratio cause population growth

iii. Money supply and output growth cause dependency ratio

There was no direct causality between population growth and unemployment rate in Nigeria. However it can cause unemployment through output growth.

In addition, it was concluded that shocks in unemployment account for most of the variations in itself in he short run while in the long run, other variables combined are the major contributor to the variations in unemployment rate in Nigeria. Population growth account for more variations in the long run compared to other macroeconomic variables.

5.3 Recommendations

Based on the findings of this study, the following recommendations were suggested;

1. Concerted effort should be made by the government, individuals and agencies to check and stabilize population growth.
2. Government should provide infrastructural facilities including education and channel thegrowing population into productive sectors of the economy in order to enable them to make meaningful contribution to the economic growth and development of the country.
3. Policies and programmes should be implemented to enhance industrialization and improve employment level.

5.4 Contribution to Knowledge

The study focused on investigating the interaction between population growth and unemployment rate in Nigeria by examining the causality relationship and the response of unemployment to shocks in population growth. This study contributed to existing literature by examining the links between unemployment rate and population growth by establishing the causality and showing that there is no direct causality between population growth and unemployment rate in Nigeria but that it can influence unemployment through output growth.

This study further contribute to the body of knowledge by confirming the responsiveness of unemployment rate to shocks in population growth and provided empirical evidence that shocks in population growth account for more variations in the long run compared to other macroeconomic variables, even though shocks in unemployment account for more overall.

5.5 Area of Further Research

The study expect future studies to investigate the dynamic interaction between output growth, unemployment, income distribution and population growth as a result of the causal link between output growth, unemployment rate.

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Appendix

Appendix 1: Descriptive Statistics

	UNEMP	POP	DR	INF	MS	YG
Mean	4.534862	2.581738	89.01785	19.14646	23.2826	3.149929
Median	3.99	2.585689	88.38973	12.55496	19.41171	4.195924
Maximum	8.53	2.70983	92.76325	72.8355	87.76135	15.32916
Minimum	3.7	2.488792	86.61516	5.388008	-0.794167	-13.1279
Std. Dev.	1.48341	0.066913	2.027432	17.06283	18.10734	5.467388
Skewness	2.132364	0.107075	0.559597	1.783591	1.453167	-0.86651
Kurtosis	5.780734	1.748076	1.899211	4.997667	5.684279	4.635269
Jarque-Bera	31.32046	2.621407	4.004536	27.16262	25.43472	9.225836
Probability	0	0.26963	0.135029	0.000001	0.000003	0.009923
Sum	131.511	100.6878	3471.696	746.712	908.0213	122.8472
Sum Sq. Dev.	61.61412	0.170138	156.1983	11063.33	12459.27	1135.909
Observations	29	39	39	39	39	39

Appendix II: Unit Root Test: Augmented Dickey Fuller (ADF) Test Result

Unemployment: *At Level*

Null Hypothesis: UNEMP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 3 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.372645	0.0000
Test critical values:	1% level	-4.374307	
	5% level	-3.603202	
	10% level	-3.238054	

*MacKinnon (1996) one-sided p-values.

Population Growth: *At Level*

Null Hypothesis: POP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.338818	0.0091
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

*MacKinnon (1996) one-sided p-values.

Dependency Ratio: *At Level*

Null Hypothesis: DR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 6 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.369074	0.8509
Test critical values:	1% level	-4.273277	
	5% level	-3.557759	
	10% level	-3.212361	

*MacKinnon (1996) one-sided p-values.

Dependency Ratio: *1st differrence*

Null Hypothesis: D(DR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 5 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.577346	0.0004
Test critical values:	1% level	-4.273277	
	5% level	-3.557759	
	10% level	-3.212361	

*MacKinnon (1996) one-sided p-values.

Inflation: *At Level*

Null Hypothesis: INF has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.019832	0.0166
Test critical values:	1% level	-4.226815	
	5% level	-3.536601	
	10% level	-3.200320	

*MacKinnon (1996) one-sided p-values.

Money supply: *At Level*

Null Hypothesis: MS has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.439176	0.0612
Test critical values:	1% level	-4.219126	
	5% level	-3.533083	
	10% level	-3.198312	

*MacKinnon (1996) one-sided p-values.

Money supply: *1st difference*

Null Hypothesis: D(MS) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.531357	0.0000
Test critical values:	1% level	-4.226815	
	5% level	-3.536601	
	10% level	-3.200320	

*MacKinnon (1996) one-sided p-values.

Output growth: *At Level*

Null Hypothesis: YG has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.982154	0.0179
Test critical values:	1% level	-4.219126	
	5% level	-3.533083	
	10% level	-3.198312	

*MacKinnon (1996) one-sided p-values.

Appendix III: Correlation Matrix

Correlation	UNEMP	POP	DR	INF	MS	YG
UNEMP	1	0.070364	-0.152897	-0.085748	-0.302401	-0.384915
POP		1	-0.141697	-0.466074	-0.190054	0.277661
DR			1	0.566281	0.277761	-0.497264
INF				1	0.189139	-0.442773
MS					1	-0.104462
YG						1

Source: Author's Computation using Eviews 10, (2022)

Appendix IV: Toda Yamamoto Causality Test Result

Dependent variable: UNEMP

Excluded	Chi-sq	df	Prob.
POP	19.80290	2	0.0001
MS	1.062108	2	0.5880
INT	0.148842	2	0.9283
INF	0.035694	2	0.9823
YG	2.857631	2	0.2396
DR	1.582329	2	0.4533
All	58.05999	12	0.0000

Dependent variable: POP

Excluded	Chi-sq	df	Prob.
UNEMP	3.394474	2	0.1832
MS	6.355627	2	0.0417
INT	11.57965	2	0.0031
INF	16.64234	2	0.0002
YG	11.64812	2	0.0030
DR	3.841157	2	0.1465
All	89.98833	12	0.0000

Dependent variable: MS

Excluded	Chi-sq	df	Prob.
UNEMP	9.462559	2	0.0088

POP	18.44652	2	0.0001
INT	8.997010	2	0.0111
INF	4.680196	2	0.0963
YG	11.39280	2	0.0034
DR	10.96228	2	0.0042
All	45.28385	12	0.0000

Dependent variable: INT

Excluded	Chi-sq	df	Prob.
UNEMP	0.782980	2	0.6760
POP	3.512821	2	0.1727
MS	3.598898	2	0.1654
INF	5.374309	2	0.0681
YG	3.469019	2	0.1765
DR	2.403126	2	0.3007
All	24.69853	12	0.0163

Dependent variable: INF

Excluded	Chi-sq	df	Prob.
UNEMP	1.067893	2	0.5863
POP	2.931046	2	0.2310
MS	0.329121	2	0.8483
INT	0.647443	2	0.7235
YG	0.933522	2	0.6270
DR	1.666950	2	0.4345

All	13.72215	12	0.3188

Dependent variable: YG

Excluded	Chi-sq	df	Prob.
UNEMP	7.128412	2	0.0283
POP	2.586057	2	0.2744
MS	2.649669	2	0.2658
INT	3.357729	2	0.1866
INF	5.772882	2	0.0558
DR	9.549581	2	0.0084
All	87.18396	12	0.0000

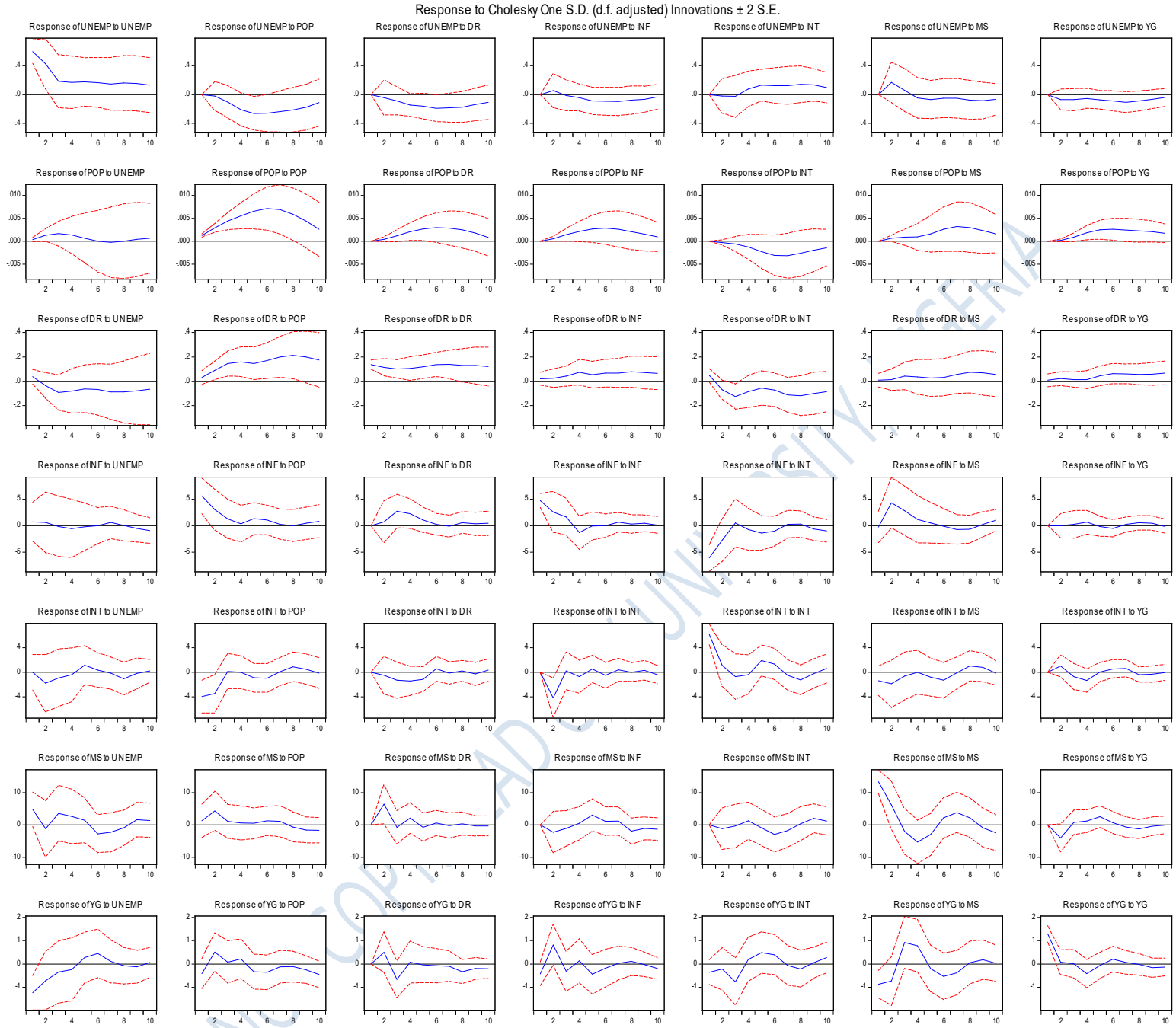
Dependent variable: DR

Excluded	Chi-sq	df	Prob.
UNEMP	3.253497	2	0.1966
POP	10.56846	2	0.0051
MS	0.645072	2	0.7243
INT	11.31914	2	0.0035
INF	3.783711	2	0.1508
YG	1.036495	2	0.5956
All	31.17422	12	0.0019

Appendix V: Portmanteau Autocorrrelation Result

Lags	Q-Stat	Prob.*	Adj Q-Stat	Prob.*	df
1	94.40431	---	98.50884	---	---
2	163.9722	---	174.4011	---	---
3	216.7551	0.0000	234.7244	0.0000	49
4	261.6125	0.0000	288.5532	0.0000	98
5	324.0085	0.0000	367.3693	0.0000	147
6	381.7465	0.0000	444.3532	0.0000	196
7	436.5368	0.0000	521.7043	0.0000	245
8	477.5793	0.0000	583.2680	0.0000	294

Appendix VI: Impulse Response



Appendix VII: Variance Decomposition Test Result

Response of UNEMP:							
Period	UNEMP	POP	MS	INT	INF	YG	DR
1	0.596904	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.427840	-0.020843	0.167045	-0.019869	0.054111	-0.069932	-0.042281
3	0.183190	-0.102321	0.060340	-0.024767	-0.012428	-0.071111	-0.088785
4	0.169609	-0.208472	-0.046572	0.077055	-0.042664	-0.053311	-0.147737
5	0.174771	-0.262069	-0.069562	0.130075	-0.087483	-0.073895	-0.160256
6	0.166322	-0.260001	-0.051425	0.124275	-0.094533	-0.089956	-0.192131
7	0.147635	-0.235471	-0.052495	0.124423	-0.098198	-0.107006	-0.183535
8	0.159467	-0.213442	-0.075948	0.141005	-0.078987	-0.090858	-0.175302
9	0.152105	-0.176080	-0.086602	0.134088	-0.066000	-0.065412	-0.138515
10	0.130025	-0.111636	-0.067593	0.095754	-0.032157	-0.040884	-0.106998

Response of POP:							
Period	UNEMP	POP	MS	INT	INF	YG	DR
1	0.000337	0.001233	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.001325	0.002913	0.000626	-0.000311	0.000540	0.000142	0.000386
3	0.001649	0.004365	0.000859	-0.000613	0.001390	0.000874	0.001177
4	0.001334	0.005535	0.000939	-0.001264	0.002108	0.001840	0.002097
5	0.000676	0.006530	0.001606	-0.002283	0.002668	0.002486	0.002686
6	-1.43E-05	0.007115	0.002611	-0.003104	0.002849	0.002578	0.002944
7	-0.000239	0.006902	0.003179	-0.003184	0.002633	0.002430	0.002835
8	-5.44E-06	0.005882	0.002965	-0.002647	0.002097	0.002263	0.002481
9	0.000389	0.004362	0.002282	-0.001987	0.001513	0.002076	0.001797
10	0.000640	0.002583	0.001611	-0.001426	0.000929	0.001695	0.000818

Response of MS:							
Period	UNEMP	POP	MS	INT	INF	YG	DR
1	4.810922	1.297470	13.30183	0.000000	0.000000	0.000000	0.000000
2	-1.187637	4.352437	6.154661	-1.190746	-2.219349	-4.006886	6.440146
3	3.576794	1.119553	-2.021491	-0.356361	-1.063670	0.804035	-0.718869

4	2.606246	0.587194	-5.270625	1.285635	0.502302	1.164630	2.143844
5	1.445940	0.495445	-2.951624	-0.884311	3.036446	2.544722	-0.703132
6	-2.729986	1.243076	2.190469	-2.967578	1.126061	0.686012	0.635050
7	-2.285677	1.110522	3.834365	-1.713445	1.169037	-0.687665	-0.202837
8	-0.877248	-0.634950	2.251741	0.390181	-1.912071	-1.257621	0.396783
9	1.606381	-1.564231	-0.910790	2.048062	-1.111084	-0.425503	-0.323977
10	1.405614	-1.695146	-2.398495	1.197193	-1.304607	-0.031315	-0.277364

Response of INT:

Period	UNEMP	POP	MS	INT	INF	YG	DR
1	0.016233	-3.934344	-1.370459	6.205641	0.000000	0.000000	0.000000
2	-1.793202	-3.472495	-1.872435	1.111814	-4.164245	1.013217	-0.496772
3	-0.920224	0.150986	-0.611927	-0.698414	0.222131	-0.698007	-1.300059
4	-0.411767	0.012270	0.004993	-0.372060	-0.725821	-1.340947	-1.397168
5	1.143589	-0.898916	-0.809717	1.919529	0.531376	0.068642	-1.133712
6	0.347857	-0.951596	-1.298552	1.348920	-0.491512	0.558248	0.565943
7	-0.133281	0.114796	-0.100708	-0.466074	0.393246	0.647197	-0.129602
8	-1.072002	0.888468	1.048949	-1.239886	0.016343	-0.374133	0.242217
9	-0.177175	0.515567	0.791951	-0.198092	0.329428	-0.304249	-0.265671
10	0.227069	-0.136445	-0.135017	0.627293	-0.392135	-0.019992	0.357902

Response of INF:

Period	UNEMP	POP	MS	INT	INF	YG	DR
1	0.743837	5.589111	-0.232428	-6.084804	4.752943	0.000000	0.000000
2	0.622097	3.018497	4.329460	-2.712113	2.595379	-0.011643	0.745101
3	-0.129830	1.277081	2.813139	0.503736	1.668087	0.248788	2.754576
4	-0.543491	0.351155	1.203789	-0.688708	-1.302991	0.649253	2.262465
5	-0.207612	1.330846	0.533179	-1.378710	-0.031899	-0.127465	1.101801
6	0.015966	1.079636	-0.115288	-1.024676	0.002289	-0.494298	0.280840
7	0.604587	0.274297	-0.705577	0.282440	0.654631	0.241570	-0.084703
8	0.044256	0.017603	-0.674747	0.289314	0.319101	0.557559	0.585198
9	-0.482878	0.451221	0.264970	-0.592594	0.452355	0.490067	0.356981
10	-0.926630	0.844872	1.012335	-0.965519	0.133525	-0.130179	0.448164

Response of

YG:

Period	UNEMP	POP	MS	INT	INF	YG	DR
1	-1.234132	-0.410909	-0.864603	-0.353456	-0.419325	1.295833	0.000000
2	-0.719430	0.510307	-0.733769	-0.215069	0.822569	0.077887	0.505924
3	-0.338793	0.081854	0.925297	-0.759636	-0.310333	0.009865	-0.653082
4	-0.233970	0.222719	0.785356	0.200598	0.134978	-0.409015	0.082077
5	0.276650	-0.328976	-0.195843	0.488766	-0.439021	-0.058221	-0.033536
6	0.454639	-0.355690	-0.526784	0.398019	-0.177080	0.208129	-0.077779
7	0.109769	-0.120224	-0.374943	-0.056325	0.036519	0.067363	-0.090742
8	-0.070877	-0.110117	0.061187	-0.208876	0.112221	-0.015150	-0.330360
9	-0.118672	-0.242675	0.186549	0.059221	-0.024670	-0.160256	-0.187942
10	0.070338	-0.448163	0.036066	0.277562	-0.195513	-0.129580	-0.207202

Response of DR:

Period	UNEMP	POP	MS	INT	INF	YG	DR
1	0.037409	0.030270	0.009548	0.048660	0.020879	0.008369	0.136409
2	-0.035367	0.089754	0.013228	-0.068891	0.024685	0.021763	0.114715
3	-0.092461	0.145618	0.043595	-0.124720	0.042957	0.013011	0.100995
4	-0.079815	0.159866	0.035471	-0.084720	0.073273	0.013462	0.104641
5	-0.061882	0.146250	0.027131	-0.056718	0.054038	0.044731	0.118452
6	-0.067496	0.169195	0.032262	-0.071233	0.066135	0.062163	0.137617
7	-0.087073	0.199778	0.056377	-0.112008	0.067850	0.060750	0.138161
8	-0.088149	0.212879	0.074635	-0.118714	0.078128	0.056998	0.129336
9	-0.077917	0.198786	0.068640	-0.099532	0.071158	0.059163	0.128959
10	-0.064291	0.174614	0.055040	-0.084648	0.064497	0.067815	0.120714

Cholesky Ordering: UNEMP POP MS INT INF YG DR

Appendix IX: Tabular Summary of Gaps

SN	Author's Name and Years	Research Title	Findings	Gaps
1	S. Akutson, A.J. Messiah and Y.D. Araf (2018)	The Impact of Unemployment on Economic Growth in Nigeria: An Application of Autoregressive Distributed Lag (ARDL) Bound Testing.	The study revealed that the growth of unemployment rate in Nigeria is being enhanced through the informal sector.	The study was analyzed using the ARDL Bound Testing and the Parsimonious Error Correction Model (ECM) of the ARDL Model while the current study was analyzed using OLS.
2	A. Shabbir, S. Kousar, F. Kousar, A. Adeel and R. A. Jafar (2019)	Investigating the effect of governance on unemployment: a case of South Asian countries.	The study found that financial activity (credit) and population growth had a positive and significant relationship with the unemployment rate.	The study was conducted in another geographical area and as such cannot represent the indices fond in Nigeria
3	S. O. Akinbode, K. S. Okeowo & A.T. Azeez (2017)	The Dynamics of Population and Economic Growth in Nigeria.	The study revealed that both variables has long run relationship	The study did not consider the informal sector
4	H.R. A. Menike	A Literature Review on	The study reveals that	The study was a review

	(2018)	Population Growth and Economic Development.	although a steadily growing population might seem to be an obstacle to a country's economic development, most of the countries have accepted the increase in population as a blessing.	of literatures on population growth and economic development
5	R. Maijama'a, K.S. Musa, M. Yakubu and N. Mohammed (2019)	Impact of Population Growth on Unemployment in Nigeria: Dynamic OLS Approach	The result disclosed that population and exchange rate impacted positively with unemployment.	The study examined population growth and unemployment rather unemployment and economic growth
6	U. F. Muhammad and J. David (2019)	Relationship between Poverty and Unemployment in Niger State	The result thus shows the existence of a proportionate relationship between poverty and unemployment, following the pattern of previous studies.	The study used a descriptive and a logistics regression model
7	A. Babatunde and O.B.	Population Growth and Unemployment in	A positive relationship was found to exist	The study centred on population growth and

	Awopetu (2020).	Nigeria.	between population growth and unemployment.	unemployment
8	E. Wesley and F. Peterson (2017)	The Role of Population in Economic Growth	The study found that lower population growth and limited migration may contribute to increased national and global economic inequality	The study drew its conclusion from review of other scholars
9	D. N. Obodoechi and C. U. Onuoha (2019)	The Validity of Okun's Law: An Empirical Evidence for Nigeria.	The study found that a significant positive relationship between the aforementioned variables and GDP except for population growth	The Auto Regressive Distributed Lag model approach, the ARDL Bounds Test and Cointegration Test were utilized thereby omitting OLS
10	U. C. Orumie (2016)	The Effect of Unemployment Rate and Population Growth Rate on Gross Domestic Product in Nigeria.	The result also reveal that unemployment and population growth contribute commeasurably to gross domestic product.	The study used multiple regression analysis

11	Banda, H. Ngirande and F. Hogwe (2016)	The impact of economic growth on unemployment in South Africa: 1994-2012.	The result indicated a negative impact of economic growth on unemployment	The study utilized vector error correction model (VECM)
12	P. O. Adekola, A.A. Allen, A.A. Olawole-Isaac, M.A. Akanbi, and O. Adewumi (2016)	Unemployment in Nigeria; A Challenge of Demographic Change?	Results show that population growth is not the sole factor responsible for increase in unemployment in Nigeria as unemployment statistics is stable for U.S. and China while their populations are growing, but the reverse is the case for Nigeria as both population and unemployment are growing. Recommendations were thereafter made to address other likely factors identified	The study examined population growth and unemployment rather unemployment and economic growth

13	H. B. Jajere (2016)	Impact of Unemployment on Economic Growth in Nigeria 1980 – 2010.	The result shows that unemployment does not significantly affect economic growth, but a good performance of an economy in terms of per capita growth may therefore be attributed to the other factors affecting economic growth in the country.	The research analysed with only Ordinary Least Square regression technique.
14	G. G.Wayas, S. Selvadurai, A. H. Awang (2019)	An Examination of the Causes of Unemployment among Youths in Nigeria.	The results of this study revealed that youth unemployment is caused mainly by corruption which has led to the degrading nature of infrastructures, security, and neglect of agriculture.	The study drew its conclusion from review of other scholars not from empirical review
15	J. E. Ogbuabor, G. C. Udo and F. N. Onuigbo (2018)	Population Growth and Economic Development in Nigeria	The results indicate that population growth retards economic development in Nigeria.	The study examined population growth and economic development while the present study

			However, the results further show that credit to the private sector is an important driver of economic development in Nigeria both in the short-run and long-run.	shall examine economic growth as the dependent variable
16	H.H. Salum (2019)	The Negative Consequences of a Rapid Population Growth.	The study revealed the differences in population growth between the world regions	The study drew its conclusion from review of other scholars
17	Y. kuso and M. J. Gachunga (2019)	An Analytical Study Of The Impact Of Unemployment On Economic Growth In Kenya. International Journal of Business Marketing and Management	The result indicated existence of long run relationship between unemployment and economic growth in Kenya. Unemployment rate has a positive impact on the economic growth on both the short run and long run.	The study was outside the geographical scope of the current study.
18	J. E. Ogbuabor, G. C. Udo and F.	Population Growth and Economic	The results indicate that population growth	The study was limited to population growth and

	N. Onuigbo. (2018)	Development in Nigeria.	negatively impact economic development in Nigeria.	economic development.
19	E.H. Tartiyus, M.I. Dauda & A. Peter (2015)	Impact of Population Growth on Economic Growth in Nigeria (1980-2010).	The result revealed that there is a positive relationship between economic growth (proxy by GDP growth) and population, fertility and export growth while negative relationships were found between economic growth. life expectancy, and crude death rate.	The data were analyzed using descriptive statistics as well as regression analysis as against the present study which engaged OLS, The Auto Regressive Distributed Lag model approach, the ARDL Bounds Test and Cointegration Test
20	H.O. Aidi, C.N. Emecheta, and M. Ikenna. 2016	Population Dynamics and Economic Growth in Nigeria.	The result revealed among other that all the core variables (i.e. fertility, mortality and net-migration) of the study are inversely related to economic growth.	Time series data spanning from 1970 to 2014 was used for the study while the present study will serve as an upgrade in time series

21	K. Guga, L. Alikaj & F. Zeneli	Population, Economic Growth and Development in the Emerging Economies.	The study showed a significant relationship between human capital development and economic growth	The finding of the study is in contrast to what the present study sought to explore.
22	O.O. Ogunleye, O. A. Owolabi & M. Mubarak (2018).	Population Growth and Economic Growth in Nigeria: An Appraisal.	The findings of the study reveals that population growth has a positive and significant effect on economic growth of Nigeria.	Population growth was used to measure economic development in the study while the present study measured population growth to measure unemployment
23	C. Asuru (2016).	Population Growth and Development in Nigeria: an Overview.	The study found that, there is a positive and bidirectional relationship between population growth and development in Nigeria, meaning that they granger causes each other. The study also found that per capita Income and (YPC), Life expectancy at Birth	The study focused on population growth and development as against population growth and unemployment

			(Lifbirt) impact positively on population growth while Adult illiteracy and unemployment (unemrate) rates impacted negatively on population growth.	
24	H. Morsheda and R. Nassar (2015)	Effects of debt and GDP on the unemployment rate: an empirical study.	Results of this paper showed that GDP has a negative correlation with debt and with unemployment rate.	Unemployment was measured with GDP while the present sought to examine the impacts of population growth
26	L.Brew Lewis, M.V. Crankson, F. Nyarko, I. Ampofi (2019)	Effects of Gross Domestic Product and Inflation Rate on Unemployment Rate in Ghana: Comparative Analysis of Multiple Regression and Covariance Matrix Models.	The analyses of the outputs highlight the importance of both predictor variables on unemployment rate in Ghana .	The study used covariance matrix and multiple regression models
27	K. A. M. AL-Tamimi. (2019)	Effect of Unemployment Rate on	This study found that there exist a	The geographical location of the study is

		Growth Rate of Gross Domestic Product of Jordan.	insignificant effects of unemployment percentage to total labor force	Ghana, other regions will be examined
28	M. Shahid. (2014)	Effect of Inflation and Unemployment on Economic Growth in Pakistan.	This paper discovered that there exist a relationship between unemployment rate and growth rate of GDP in Pakistan	The study was conducted in Pakistan while the present was conducted in Nigeria
29	S. Makaringe & H. Khobai (2018).	The effect of unemployment on economic growth in South Africa (1994 2016).	This study found a relation between unemployment rate and growth rate of GDP and a negative effect of unemployment rate on growth rate of GDP in the long run and the short run	The study was conducted in South Africa while the present was conducted in Nigeria
30	. Seth, M. John & A. Dalhatu (2018)	The Impact of Unemployment on Economic Growth in Nigeria: An Application of	The study concluded that there is no relationship between unemployment rate and growth rate of GDP in	The study was analysed with Auto Regressive Distribution Lag (ARDL)

		Autoregressive Distributed Lag (ARDL) Bound Testing.	Nigeria	
31	N. Dritsakis & P. Stamatiou (2016)	The Effects of Unemployment on Economic Growth in Greece. An ARDL Bound Test Approach.	The study discovered a relationship between unemployment rate and growth rate of GDP in the long run and short run and there is a unidirectional causal effect of unemployment to growth rate of GDP	The study was also analysed with Auto Regressive Distribution Lag (ARDL)
32	S. YahayaEnejoh & A. Tsauni (2017)	An Analytical Study of the Impact of Unemployment on Economic Growth in Nigeria (1970-2016).	This study found that there's a relationship between unemployment rate and growth rate of GDP in the long run in Nigeria there is a positive effect of unemployment rate on growth rate of GDP in the long run and short run and there is a	The study depended on Johanson Cointegration Estimation and Error Correction models

			unidirectional causality from unemployment to growth rate of GDP	
33	O. Omitogun & A. Longe (2017)	Unemployment and Economic Growth in Nigeria in the 21st Century	This study found that there's an effect of unemployment rate on growth rate of GDP, but it decreased over time due to the efforts of government in Nigeria towards decreasing unemployment rate.	The study employed Vector Auto regressive (VAR) approach
34	O. Soylu, I. Cakmak & F. Okur (2018)	Economic growth and unemployment issue: Panel data analysis in Eastern European Countries.	The study found a relationship between these two variables within the long run and economic growth has a positive effect on unemployment rate in these countries.	The study geographical area was under the geographical scope of the present study
35	H. Jajere (2016)	Impact of Unemployment on Economic Growth in Nigeria 1980 –2010.	The study concluded that unemploymentdoesn't h ave any effect on growth	Time series data spanning from 1980 to 2010 was used for the study while the present

			rate of GDP in Nigeria for this period	study will serve as an upgrade in time series
36	A. Thayaparan (2014)	Impact of Inflation and Economic Growth on Unemployment in Sri Lanka: A Study of Time Series Analysis.	This study reached that rate of growth of GDP has insignificant impact on unemployment rate, but there's bidirectional causality between growth rate of GDP and unemployment in Sri Lanka	The geographical area of the study was outside the scope of the present study.
37	A.A.N. Meidani (2015)	The Dynamic Effect of Unemployment Rate on Per Capita Real GDP in Iran The Dynamic Effect of Unemployment Rate on Per Capita Real GDP in Iran,	The results of ARDL long-run coefficients revealed that the unemployment rate is statistically significant in determining GDP in long run. Based on the results of short run and long run, unemployment is positively related with GDP	The geographical area of the study was Iran which is outside the scope of the present study.
38	B.S. Ilugbusi, R.	The Nexus between	The study found that,	The variables employed

	B. Ajala, N.L. Nkire and O.D. Ojo (2019)	Unemployment and Economic Growth in Nigeria (1986-2018).	variables is co-integrated, implying that they move together during a long run. It further revealed that, there exist both short and long term relationship between unemployment and economic growth	were estimated using auto regressive distributed lag (ARDL)
39	M.C. Sibusiso and K. Hlalefang. (2018)	The effect of unemployment on economic growth in South Africa (1994-2016).	The study found a long run relationship between unemployment and economic growth.	The study employed Auto Regressive Distribution Lag (ARDL)
40	S. Akutson, A.J. Messiah & Y.D. Araf (2018)	The impact of unemployment on economic growth in Nigeria: An Application of Autoregressive Distributed Lag (ARDL) Bound Testing.	The findings showed that there is no long- run relationship between unemployment rate and economic growth in Nigeria.	Gross Domestic Product was used to measure unemployment rate as against the present study which measured unemployment rate with population growth

Bio-data

A. **Personal Data**

Name:

Email address:

Phone number:

House address:

Date of birth:

Place of birth:

Nationality:

Marital status:

Name and address of next of Kin:

B. **Educational Background**

I. Educational Institution Attended With Dates

i. Primary Education

ii. Secondary Education

iii. Higher Educational Institution

C. **Working Experience with Dates**

Date of assumption of duty in current establishment:

Status off irstappointment in current establishment:

Present position:

Date of commencement:

Signature **Date**

University Compliance Certification

This is to certify that the thesis by **Mojere Adegbite, Valk-Kenneth** with the Matric Number LCU/PG/001116 in the Department of Economics, Faculty of Management and Social Sciences, Lead City University, Ibadan is infull compliance with the approved University Format and Style.

_____ _____

Signature **Date**