International Journal of Multidisciplinary Research and Development
www.allsubjectjournal.com
Online ISSN: 2349-4182, Print ISSN: 2349-5979, Impact Factor: RJIF 5.72
Received: 01-03-2021, Accepted: 02-04-2021, Published: 07-05-2021
Volume 8, Issue 5, 2021, Page No. 01-08

Agricultural sector performance and job creation in Nigeria

Clement Korgbeelo
Ph.D., Department of Economics Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt, Nigeria

Abstract
Unemployment is a serious issue in Nigeria today. It is generally believed that the agricultural sector has the potential to create jobs and hence, reduce the level of unemployment in the country. This study, therefore, examined the impact of agricultural sector performance on job creation in Nigeria. Specifically, the study examined the impact of crop production output, livestock output, fishery output and forestry output on the unemployment rate in Nigeria. Annual time-series data from 1981 to 2019 were used for the study. The data were obtained from secondary sources. The Autoregressive Distributed Lag (ARDL) approach was used in estimating the data. The findings indicated that crop production output significantly reduces unemployment in Nigeria while livestock and fishery outputs have weak reducing effect on unemployment in Nigeria. Also, forestry output insignificantly stimulates unemployment in Nigeria. Among other things, it is recommended that government should support farmers with subsidized inputs and improved varieties of crops.

Keywords: agriculture, performance, unemployment, ARDL

Introduction

Globally, sustainable economic development is generally accompanied by agricultural sector development. Hence, agriculture plays a vital role in the development process of any country. It is an important sector that stimulates the development and industrialization of many countries and equally plays a big role in job creation. Therefore, the development of the agricultural sector is crucial for the attainment of food security, income and employment generation, and for stimulating industrialization, and indeed the overall development of a country. The technological progress made by the advanced countries of the world had its beginnings in agriculture (Ogbalubi & Wokocha, 2013; Ogbanga, 2018) [25, 26] . Indeed, the role of agriculture in the development of a country can hardly be overemphasized.

In Nigeria before independence and even up to the first post-independent decade, the agricultural sector was the highest contributor to the country's Gross Domestic Product (GDP) and also the highest employer of labour. However, since the 1970s, the contribution of the agricultural sector to the economy has declined due to the oil syndrome which resulted in the neglect of the once vibrant agricultural sector (Anyanwu, Oyefusi, Oaikhenan & Dimowo, 1997) [4]. Hence, the agricultural sector that was once the mainstay of the economy and the largest employer of labour is no longer what it used to be (Olukemi, 2018) [28] .

Unemployment is one of the serious macroeconomic problems troubling Nigeria today. It is also true that the agricultural sector in Nigeria is endowed with the potential to create jobs and reduce unemployment in the country. But despite this huge job creation potential of the sector, the country is still experiencing high and rising levels of unemployment. The reason is that the potential of the agricultural sector has not been adequately harnessed due to several factors acting as impediments. Some of these factors include lack of credit facilities, lack of modern storage facilities, rural-urban immigration of our able-bodied youths, etc. The argument, therefore, is that, if these problems are resolved to a reasonable extent, the capacity of the sector to create jobs will improve. This can be achieved by formulating and implementing sound policies and programmes. But such policies and programmes need to be based on empirical evidence. This study, therefore, is an attempt to provide empirical evidence on the relationship between agricultural sector performance and unemployment in Nigeria.

This study is organized into five sections. Section one is concerned with the introduction, section two is focused on literature review. The method of conducting the study is examined in section three. Section four is devoted to the presentation of results and discussion of findings while conclusions and recommendations are presented in section five.

Literature Review

Conceptual Clarifications

Some of the concepts used in this study are clarified in the section.

The Concept of Agriculture

Agriculture is defined as the art and science of cultivating the soil, growing crops and raising livestock for food and other human needs or economic gains. It includes the preparation of plant and animal products for people to use and their distribution to markets (Anyanwuocha, 2006) [5].

The Concept of Unemployment

Unemployment is a term referring to individuals who are employable (i.e, able to work) and seeking a job at the prevailing wage rate, but are unable to find a job (Ohale & Onyema, 2002) [27]. Unemployment also includes people who are waiting to return to a job after being discharged. However, it does not include individuals who have stopped looking for a job in the past four weeks due to various reasons such as leaving work to pursue higher education, retirement, disability, and personal issues. Even people who

are not actively seeking a job anywhere but want to find one are not considered unemployed (Nwaimo, 2009) [24].

The Agricultural Sector in Nigeria

The agricultural sector in Nigeria is made up of both traditional and modern farming activities. Based on available estimates, traditional agriculture accounts for an average of 90 percent of the country's total agricultural output while modern agriculture accounts for 10 percent of the total agricultural output. The traditional aspect of Nigeria's agricultural sector is subsistent and is associated with extensive land use and shifting cultivation, family or communal land tenure system, land fragmentation, use of crude and labour intensive implements, etc. The productivity of the traditional agricultural sector is low and susceptible to the vagaries of weather, pests and diseases (Central Bank of Nigeria, 2010) [9].

The agricultural sector is significant to the Nigerian economy in terms of its contribution to GDP and labour employment. The share of agriculture in total GDP average 38.1 percent, 39.3 percent, 24.8 percent and 23.9 percent for the periods 1981-1989, 1990-1999, 2000-2010, and 2011-2019 respectively. Analysis of the structure of the agricultural sector by economic activities indicated that croup production remained the dominant subsector followed by livestock, fishery and forestry (CBN, 2019). Tables 1. and 2 show the contributions of the agricultural output.

Table 1: Average Agricultural Sector Output by Activity (N Billion)

Period	Crop Production	Livestock	Fishery	Forestry	Total
1960-1970	1.26	0.143	0.082	0.117	1.602
1971-1980	3.33	0.855	0.554	0.23	4.969
1981-1990	2241.25	413.816	74.215	78.487	2807.768
1991-2000	3454.16	496.08	97.115	81.186	4128.541
2001-2010	8733.17	749.088	192.367	107.136	9781.761
2011-2019	14253.65	1116.532	333.72	165.628	15899.53

Source: CBN Annual Statistical Bulletin for 2019

Table 2: Contribution of Agriculture by Activity to Total Agricultural Output.

Period	Crop Production (%)	Livestock (%)	Fishery (%)	Forestry (%)
1960-1970	78.65	8.92	5.12	7.30
1971-1980	67.01	17.20	11.15	4.62
1981-1990	79.82	14.74	2.64	2.80
1991-2000	83.66	12.01	2.35	1.97
2001-2010	89.28	7.66	1.97	1.10
2011-2019	89.84	7.02	2.09	1.04

Source: CBN Annual Statistical Bulletin for 2019

Nigeria's Unemployment Situation: An Overview

Unemployment is not a recent challenge in Nigeria as the national unemployment rate increased from 4.3 percent in 1970 to 6.4 percent in 1980. It fluctuated around 6.0 percent until 1987 when it rose to 7.0 percent (Akintoye, 2008).

Due probably to the positive effects of the Structural Adjustment Programme (SAP) introduced in 1986, the unemployment rate declined from 7.0 percent in 1987 to 1.9 percent in 1995. Thereafter, it increased to 2.8 percent and 13.1 percent between 1996 and 2000 respectively (Njoku and Ihungba, 2011) [23].

Data from the CBN indicated that the unemployment rate rose from 13.1 percent in 2000 to 14.8 percent in 2003. It however dropped to 11.9 percent and 10.6 percent in 2005 and 2012 respectively. The unemployment rate dropped to 10.0 percent and 7.8 percent in 2013 and 2014 respectively. By 2016 that the country plunged into recession, the annual unemployment rate was 14.2 percent. Youth unemployment reached 17.6 million people (about 22 percent of the labour force) in the second quarter of 2016 (Ministry of Budget and National Planning, 2017) [19]. The values of the unemployment rate stood at 17.5 percent, 22.6 percent and 8.1 percent in 2017, 2018 and 2019 respectively (Central Bank of Nigeria, 2019).

Theoretical Literature Review

Some theories related to this study are reviewed in this section.

Theories of Agricultural Development

Theories of agricultural development are theories that seek to explain the forces in the environment, society and the economy that bring about agricultural growth and development. These theoretical models include the conservation model, the urban-industrial impact model, the diffusion model and the high payoff input model. However, for the purpose of this study, the high payoff input model was adopted as the main theoretical basis. This is based on the fact that the high payoff input model is rated higher above the other three models. Besides, it embraces the central themes and concepts of the other three models. In fact, the high payoff input model was developed to address the inadequacy of policies based on the conservation, urban-industrial impact, and the diffission models (Udemezue and Osegbue, 2018) [35].

In the 1960s, there arose a new perspective that the key to transforming a traditional agrarian sector into a viable source of economic growth lies in investments designed to make modern high payoff inputs available to farmers in less developed countries (Ruttan, 1977) [30]. According to this perspective, farmers in traditional agrarian systems were viewed as rational, efficient resource allocators. They however remained poor because, in most developing countries, there were only limited technical and economic opportunities for them to explore.

The new high payoff inputs, according to Schultz (1964), can be categorized as follows:

- The capacity of public and private sector research institutions to produce new technical knowledge;
- The capacity of the industrial sector to develop, produce, and market new technical inputs; and
- The capacity of farmers to acquire new knowledge and use new inputs effectively.

The successful efforts to produce high-yielding varieties of grain suitable for the tropical region led to the acceptance and incorporation of the high payoff input model into an economic doctrine. It should be noted that, during the 1950s, new high-yielding wheat and corn varieties were developed in Mexico while high-yielding varieties of rice were introduced in the Philippines. The high returns associated with these new varieties made them to be introduced to farmers in Asia, Africa and Latin America. (Stakman, Bradfield and Mangelsdorf, 1967; Moseman, 1970; Ruttan, 1977) [34, 30].

Theories of Unemployment

Some of the theories put forward to explain the causes and nature of unemployment are briefly examined in this section. In the classical theory of unemployment, unemployed is seen as an indication that the smooth functioning of the labour market has been tampered with in one way or the other. The classical theory argues that the labour market consists of the demand for and the supply of labour. At equilibrium, the demand for labour is equalized with the supply of labour at an equilibrium or market-clearing real wage rate and full employment.

According to classical economists, unemployment depends on the level of the real wage rate. Thus, unemployment occurs when real wages are fixed over and above the equilibrium level due to rigidities brought about by minimum – wage policies, trade union bargaining, etc. Therefore, according to the classical theory, apart from frictional obstructions, involuntary unemployment would not exist if it were not for the fact workers habitually agitate for a wage rate higher than the equilibrium level (Mouhammed, 2011; Ahuja, 2013) [22, 1].

The Keynesian theory of unemployment rejects the classical notion of full employment in a capitalist economy. Keynes developed an underemployment equilibrium hypothesis rather than full employment equilibrium. According to Keynes, if at the going wage rate, people do not find job, a situation of "involuntary" unemployment emerges. In his theory of involuntary unemployment, Keynes also rejected the classical assumption of wage-price flexibility. According to Keynes, money wages are inflexible downward but flexible upwards because of institutional factors like trade union activities. Thus, any wage cut will be strongly resisted by trade unions. The Keynesian theory sees wage rigidity as the main cause of involuntary unemployment. This implies that free enterprise economy fails to reach full employment equilibrium because of wage rigidity (Jossa, 1992; Smith and Zoega, 2009) [16, 32].

The search theory of unemployment which became prominent during the 1980s and 1990s sees unemployment as a process of search, rather than seeing unemployment as the counter-state to employment. In the process of searching for a job, the success of a job seeker depends on two broad circumstances:

- The general balance of demand for and supply of labour in the market, and
- The match between the searcher's characteristics and those of the available jobs (Albrecht & Axell, 1984) [3].

The search theory postulates that each job seeker sets a minimum or reservation wage while searching for a job. The job searching process will continue until the searcher gets a job that offers to pay at least the reservation wage. If it takes too long for the job seeker due to the inability of the search to meet his expectations, the reservation wage may be adjusted downward. This adjustment reduces the number of unemployed (Ohale & Onyema, 2002) [27]. Hence, the theory does not view unemployed persons as idle resources but consider the job search as a socially productive exercise (Fitzgerald, 1998) [14].

Empirical Literature Review

Our concern in this section is to examine some of the empirical studies conducted on the relationship between agriculture and unemployment.

El-Agrody, Othman and Hassan (2010) [11]. Found a positive impact of agricultural investment and agricultural domestic output on agricultural unemployment in Egypt. Mireri (2013) [20]. Used a sample of 194 urban farmers in Kisumu Municipality of Kenya to establish that urban agriculture contributes to job creation, household income and food security in Kenya. Megbowon, Ojo and Olasechinde (2017) [18]. found a negative impact of agro-processing output on agricultural sector employment in South Africa. Wossen and Ayele (2018) [36]. found that agro-businesses generate employment for youths in Ethiopia.

In Nigeria, Ayinde (2008) [7]. established that the agricultural growth rate has a significant inverse relationship with the unemployment rate. Ayinde, Aina and Babarinde (2017) [8]. found a significant positive impact of agricultural output on unemployment in Nigeria. Using a sample of 360 farmers in Argungu Local Government Area of Kebbi State, Saheed, Alexander, Isa and Adeneye (2018) [31]. concluded that the Kebbi State government Anchor Borrower Programme (ABP) has a significant positive impact on job creation in Kebbi State, Nigeria. Olukayode and Alimi (2018) [29]. showed that agricultural output and tax revenue have significant positive effects on unemployment in Nigeria. Olukemi (2018) [28]. Showed that agricultural output has a significant positive impact on job creation in Nigeria. Similarly, Enilolobo, Mustapha and Ikechukwu (2019) [12]. found a significant negative long-run relationship between agricultural output and unemployment in Nigeria. Kemi (2019) [17]. used a sample of 150 poultry farmers in the Federal Capital Territory (FCT), Abuja to show that agriculture through poultry farming reduces unemployment in Nigeria. Fawole and Ozekan (2019). Through a survey of 180 respondents from Ondo, Oyo and Osun States, established that youths from Southwestern Nigeria are willing to engage in agricultural employment if given the necessary support. In their study Ashagidigbi, Yusuf and Agboola (2019) [6]. used a sample of 2134 arable crop farmers to show that youth participation in arable crop farming will reduce youth unemployment in Nigeria. Finally, Sobohein, Mathew, Gershon, Ogunbuji and Nwosu (2019) [33]. concluded from their study that agriculture provides employment opportunities for the poor to increase their income in West Africa.

The empirical literature on the impact of agricultural sector performance on unemployment in Nigeria showed that none

of the studies disaggregated the total output of the sector into the various sub-sectors or components of the agricultural sector. To fill this gap, this study examines the impact of agricultural sector performance on unemployment by disaggregating the total agricultural sector output into the various sub-sectors such as crop production, livestock, fishery and forestry. The relevance of this approach lies in the fact that it will reveal the specific impact of the individual sub-sectors on unemployment in the country. This will enable us to see the comparative performance of the various components and also assist in making specific policy recommendations for cash of the components of the agricultural sector.

Methodology

Description of the Variables of the Study

The variables used for this study are explained in this section.

Dependent Variable:

The dependent variable for this study is the unemployment rate. Unemployment rate refers to the number of persons considered as unemployed expressed as a percentage of the total labour force.

Independent Variables

The independent variable for this study is agricultural sector output growth. It is measured in terms of the output of the agricultural sector, i.e, the contribution of the agricultural sector to Nigeria's GDP. However, the total output of the agricultural sector is disaggregated into the output of the four components of the sector, namely, crop production, livestock, fishery and forestry.

Model Specification

The model used for this study is specified based on the high payoff input model and the empirical models used by Ayinde (2008) [7]. And Enilolobo, Mustapha and Ikechukwu (2019) [12]. However, these models were adopted with slight modifications to accommodate the variables of this study.

The mathematical form of the model on which our econometric model is built is expressed as

$$UNPR = f(CPOUT, LSOUT, FISOUT, FROUT) \quad - - - - - \quad 3.1$$

Where, UNPR = Unemployment Rate,
CPOUT = Crop Production Output,
LSOUT = Livestock Output,
FISOUT = Fishery Output,
FROUT = Forestry Output and
F = Functionality Notation.

UNPR is the dependent variable while CPOUT, LSOUT, FISOUT, and FROUT are the independent variables.

The ordinary least squares (OLS) multivariate linear regression equation based on the above functional relation is expressed as:

$$UNPR = \beta_0 + \beta_1 CPOUT + \beta_2 LSOUT + \beta_3 FISOUT + \beta_4 FROUT + U \quad - - - \quad 3.2$$

Where, β_0 = regression constant, β_1, β_2, β_3, and β_4 = coefficients of the explanation variables, and U = error term. All the variables are as earlier defined.

A logarithmic transformation of equation 3.2 is expressed as:

$$UNPR = \beta_0 + \beta_1 \log CPOUT + \beta_2 \log LSOUT + \beta_3 \log FISOUT + \beta_4 \log FROUT + U \quad - \quad 3.3$$

Where log = the natural logarithm of the variables.

A Priori Theoretical Expectations

Based on a priori, theoretical reasoning, we expect the following signs of the coefficients of the explanatory variables

$$\beta_1<0, \beta_2<0, \beta_3<0, \beta_4<0$$

The implication of the negative signs (i.e, less than zero) of the coefficients is that we expect a negative relationship between each of the explanatory variables and the dependent variable.

Nature and Sources of Data

This study made use of annual time series data for the period 1981 to 2019. The data were obtained from secondary sources namely, the Central Bank of Nigeria annual statistical bulletin for 2019 and the Central Bank of Nigeria annual reports and statements of account for various years.

Technique of Data Estimation

The ordinary least squares regression technique was used in estimating the specified model. However, because of the peculiar nature of time-series variables (Gujarati & Porta, 2009) [15]. The ordinary least squares techniques was proceeded by unit root test. To this end, the Phillips-Perron unit root test was used to test whether the variables are stationary or not and to determine their order of integration. In the Phillips-Perron unit root test, we test the null hypothesis that the variables have unit root (i.e, they are non-stationary) against the alternative hypothesis of no unit root in the variables (i.e, they are stationary). The Phillips-Perron unit root test is conducted by estimating one of the following models.

$$\Delta Y_t = \quad \delta Y_{t-1} + {}_{t-1} + \varepsilon_t \quad - - - - - - - \quad 3.4$$

$$\Delta Y_t = \quad \alpha_1 + \delta + Y_{t-1} + {}_{t-1} + \varepsilon_t \quad - - - - - \quad 3.5$$

$$\Delta Y_t = \quad \alpha_1 + \alpha_2 t + \delta Y_{t-1} + \Delta + \varepsilon_t \quad - - - - - \quad 3.6$$

Where Y_t is a time-series, Δ is the difference first operator, α_1 is a constant, n is the optimum number of lags, and εt is the white noise error term. Equations 3.4, 3.5 and 3.6 represent the three null hypotheses that Y_t is a random walk, Y_t is a random walk with drift, and Y_t is a random walk with drift around a deterministic trend respectively.

Based on the results of the unit root test, the autoregressive distributed lag (ARDL) model was used in estimating the data. The ARDL bounds test is based on the condition the order of integration of the series is a mixture of both I(0) and I(1).

Presentation of Results and Discussion of Findings Descriptive Statistics

Table 3: The descriptive statistics results are presented

Variables	UNPR	LOG(CPOUT)	LOG(LSOUT)	LOG(FISOUT)	LOG(FROUT)
Mean	9.457895	8.666803	6.454789	4.224140	4.627298
Median	7.950000	8.296103	6.331001	4.197052	4.481640
Maximum	22.60000	11.95624	7.098425	4.657288	5.233619
Minimum	1.900000	7.389558	5.833084	3.704999	4.209309
Std. Dev.	5.666670	1.045192	0.401331	0.187006	0.312175
Skewness	0.586704	1.384701	0.323369	0.003763	0.696258
Kurtosis	2.344751	5.286662	1.684203	4.737394	2.014137
Jargue-Bera	2.859877	20.42248	3.403518	4.779440	4.609125
Probability	0.239324	0.00037	0.182362	0.091655	0.099802
Sum	359.4000	329.3385	245.2820	160.5173	175.8373
Sum Sq. Dev.	1188.113	40.41977	5.959450	1.293940	3.605764
Observations	38	38	38	38	38

Source: Computed from E-view 10.0

The descriptive statistics in table 4 indicate that the variables have mean values of 9.458, 8.667, 6.455, 4.224 and 4.627 for UNPR, CPOUT, LSOUT, FISOUT and FROUT respectively. The standard deviation indicated that UNPR with a standard deviation value of 5.667 is the most fluctuating series while FISOUT with a standard deviation value of 0.187 is the most stable series. The Skewness statistic result shows that all the variables are positively skewed. The kurtosis statistic shows that CPOUT and FISOUT are normally distributed while UNPR, LSOUT and FROUT are platykurtic (i.e, their values are less than 3). This suggests that the distributions of UNPR, LSOUT and FROUT are flat relative to normal distribution. This also suggests that UNPR, LSOUT and FROUT have unit roots (i.e, non-stationary).

Unit Root Tests Results

The results of the Phillips-Perron unit root tests are presented in Table 5

Table 4: Phillis-Perron Unit Root Tests Results

Variable	Phillips-Perron Statistic (At Levels)	Critical Value (5%)	Phillips-Perron Statistic (At 1st Difference)	Critical Value (50%)	Order of Integration
UNPR	-2.603147	-2.941145	-8.085349	-2.943427	I(1)
LOG(CPOUT)	-3.196243	-2.945842	-10.29509	-2.943427	I(0)
LOG(LSOUT)	-1.539728	-2945842	-3.893875	-2.943427	I(1)
LOG(FISOUT)	-3.010274	-2.945842	-9.394279	-2.943427	I(0)
LOG(FROUT)	-2.075346	-2.945842	-6.248906	-2.943427	I(1)

Source: Computed from E-view 10.0

The unit root test results in Table 5 show that crops production output (CPOUT) and fishery output (FISOUT) are stationary at levels (i.e, I (0)). Unemployment rate (UNPR), livestock output (LSOUT) and forestry output (FROUT) were not stationary at levels. They are however stationary after taking their first difference. That is, UNPR, LSOUT and FROUT are integrated of order one (i.e, (I (1)).

ARDL Bounds Tests Result

The result of the ARDL bounds test for cointegration is presented in table 6

Table 5: ARDL Bounds Test Result

F-Bounds Test	Null Hypothesis: No Long-run Relationship			
Test statistic	Value	Significance	I(0)	I(0)
F-Statistic	13.39596	10%	2.2	3.09
K	4	5%	2.56	3.46
		2.5%	2.88	3.87
		1%	3.39	4.37

Source: Computed from E-view 10.0

From the ARDL bounds test result in table 6, the computed F-statistic of 13.39596 is greater than the upper bound (i.e. I (1)) critical value of 3.49 at the 5% level of significance. From the foregoing, we reject the null hypothesis of no long-run relationship and therefore, conclude that there exists a long-run relationship among the variables in the model.

Estimated ARDL Regression Results

The estimated short-run and long-run regression results are presented in Table 6 below. It should be noted that the order of lag selection in the ARDL process was automatically done based on the Akaike Information Criterion (AIC).

Table 6: Estimated ARDL Long-Run and Short-Run Regression Results

ECM Regression Case 2: Restricted Constant and No Trend				
Variable	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
D(UNPR(-1))	3.501819	0.318242	11.00363	0.0001
D(UNPRE(-2))	3.119073	0.284381	10.96794	0.0001
DLOG(CPOUT)	-6.985865	0.818540	-8.534547	0.0004
DLOG(CPOUT(-1))	-22.14575	2.459695	-9.003452	0.0003
DLOG(CPOUT(-2))	-18.56376	2.196262	-8.452431	0.0004
DLOG(LSOUT)	376.9109	30.64419	12.29959	0.0001
DLOG(LSOUT(-1))	-123.6864	33.15590	-8.634079	0.0003
DLOG(LSOUT(-2))	-39.29088	30.01672	-1.308966	0.2475
DLOG(FISOUT)	-123.6864	11.51488	-10.74144	0.0001
DLOG(FISOUT(-1))	-152.6360	18.68291	-8.169816	0.0004
DLOG(FISOUT(-2))	4.685365	7.024697	0.666985	0.5343
DLOG(FROUT)	-631.0117	52.39592	-12.04315	0.0001
DLOG(FROUT(-1))	350.3292	60.68065	5.773327	0.0022
DLOG(FROUT(-2))	-57.20378	44.14997	-1.295670	0.2517
CointEq(-1)	-0.944526	0.389984	-12.67878	0.0001
Long-Run Coefficients				
Variable	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
LOG(CPOUT)	-8.450395	2.878307	-2.935891	0.0314
LOG(LSOUT)	-10.82960	7.937948	-1.364282	0.6891
LOG(FISOUT)	-12.56629	6.763943	-1.857835	0.0725
LOG(FROUT)	17.98018	11.15922	1.611204	0.0952
C	70.40964	13.49292	5.218264	0.0034
EC = UNPR - (-8.4504 *LOG(CPOUT) – 10.8296 *LOG(LSOUT) -12.5663 *LOG(FISOUT) + 17.9802 *LOG(FROUT) + 70.4096)				

Source: Computed from E-view 10.0

From the Error Correction Model (ECM) result in table 7, the cointEq(-1) variable (i.e, the error correction term) turned up with the right negative coefficient. It is also statistically significant at the 0.05 level of significance. The significance of the error correction term indicates that unemployment is adjusted to changes in the explanatory variables and lagged values of the dependent variables within a year in the current period. In terms of size, the coefficient of cointEq(-1) is -0.944526. This indicates a speed of adjustment of about 94 percent. Consequently, about 94 percent of any disequilibrium in the short-run is adjusted to the long-run (equilibrium) trend within a year.

Post Estimation Test Results

The results of the post-estimation tests are shown in Table 7

Table 7: Post-Estimation Tests Results

Test	Value	Prob.	Decision
Linearity (Ramsey Reset) Test t-statistic F-statistic	 0.381143 0.145270	 0.7225 0.7225	Accept (model correctly specified)
Breusch-Godfrey LM Test F-Statistic	 3.243257	 0.1778	Accept (No serial correlation)
Heteroscedasticity (Glejser) Test F-Statistic	 0.593901	 0.8231	Accept (Residuals have constant variance)
Normality (Jarque-Bera) Test F-Statistic	 1.435889	 0.6267	Accept (Data normally distributed)

Source: Computed from E-view 10.0

The post-estimation tests were used to check if the basic assumptions of the Classical Linear Regression Model (CLRM) are fulfilled. From the results in table 7, the linearity, no serial correlation, homoscedasticity and normality assumption of the CLRM are satisfied.

Discussion of Findings

From the short-run (ECM) results in the upper panel of a table of Table 7, unemployment in periods one and two have a significant positive impact on the current value of unemployment. This shows that unemployment in the past strongly aggravates unemployment in the current period. Crop production output in the current period and its first and second legs have a strong reducing effect on unemployment in the current period. Livestock output in the current period significantly stimulates unemployment while its value in period one significantly reduces unemployment. Livestock output lagged by 2 periods has a weak reducing effect on unemployment. For fishery output, its current value and its value in period one significantly reduce unemployment in Nigeria. However, the value of fishery output lagged by two periods aggravates unemployment in an insignificant manner. For forestry output, its current value significantly reduces unemployment while its value lagged by one period has a significant positive (aggravating) impact on unemployment. Also, forestry output lagged by two periods insignificantly reduces unemployment in Nigeria.

From the long-run regression result in the lower panel of table 7, crop production output turned up with the correct negative coefficient. It is also statistically significant at the

0.05 level of significance. This shows that crop production output significantly reduces unemployment in Nigeria. Similarly, livestock output has a negative coefficient. It is however not statistically significant. This implies that livestock output has a weak reducing impact on unemployment in Nigeria. In the same manner, fishery output has an insignificant negative impact on unemployment. Finally, forestry output has an insignificant positive impact on unemployment in Nigeria.

Conclusions and Policy Recommendations

Conclusions

Based on our findings from the study, the following conclusions were drawn from the study.

- Crop production output strongly reduces unemployment in Nigeria.
- Livestock output weakly reduces unemployment in Nigeria.
- Fishery output has an insignificant reducing impact on unemployment in Nigeria.
- Forestry output insignificantly aggravates unemployment in Nigeria.

Policy Recommendations

Based on the conclusions from the study, the following policy recommendations are given.

- The government at various levels should support farmers in the country through subsidized inputs and improved varieties of crops.
- The deposit money banks, the Bank of Agriculture and the Agricultural Credit Guarantee Scheme Fund (ACGSF) of the Central Bank of Nigeria should put in more efforts to ensure greater availability of credit facilities to farmers.
- Findings of recent research activities in the agricultural sector should be made available to farmers through agricultural extension services.
- To improve the performance of the forestry sub-sector, measures that will ensure better forest conservations should be put in place.

References

1. Ahuja HL. Modern economics (17th ed.) S. Chand Publishing Ltd, 2013.
2. Akintoye JR. Reducing unemployment through the informal sector: A case study of Nigeria. European Journal of Economics, Financial and Administrative Sciences,2008,4(11),25-38.
3. Albrecht JW, Axell B. An equilibrium model of search unemployment. Journal of Political Economy,1984,92(5),824-840. https://oi.org/10.1086/261260.
4. Anyanwu AC, Oyefusi A, Oaikhenan H, Dimowo FA. The structure of the Nigerian economy (1960-1997). Joanee Educational Publishers Ltd, 1997.
5. Anyanwuocha RAI. Fundamentals of economics for senior secondary schools. African First Publishers Limited,2006.
6. Ashagidigbi WM, Yusuf TM, Agboola UO. Productivity of arable crop farmers: Panacea to youth unemployment. Journal of Scientific and Technical Research,2019,22(4),16871-16877. https://doi.org/10.26717/BJSTR.2019.22.003792.
7. Ayinde OE. Empirical analysis of agricultural growth and unemployment in Nigeria. African Journal of Agricultural Research,2008,3(7),465-468.
8. Ayinde OE, Aina IV, Babarinde SO. Effects of agricultural growth on unemployment and poverty in Nigeria (1980-2012): A cointegration approach. Tropical Agriculture,2017,9(4),334-444.
9. Central Bank of Nigeria. Macro econometric model of the Nigerian economy. CBN, 2010.
10. Central Bank of Nigeria. 2019 annual statistical bulletin,2020. www.cbn.gov.ng/out/2020/STD/2019%20statisticalbulletin.
11. El-Algrody NM, Othman AZ, Hassan MBE. Economic study of unemployment in Egypt and impact on GDP. Nature and Science,2010,8(10),102-111.
12. Enilolobo OS, Mustapha SA, Ikechukwu, OP. Nexus between agriculture and unemployment in Nigeria. Journal of Economics, Management and Trade,2019,22(5),1-3. https://doi.org/10.9734/jemt/2019/v22i530103.
13. Fawole WO, Ozkan B. Examining the willingness of youths to participate in agriculture to halt the rising rate of unemployment in Southwestern Nigeria. Journal of Economic Studies,2019,46(3),578-590.
14. Ftzgerald TJ. An introduction to the search theory of unemployment. Economic Review,1998,34(11),2-15.
15. Gujarati DN, Porter DC. Basic econometrics (5th Ed.). McGraw-Hill/Irwin,2009.
16. Jossa B. Keynesian unemployment is involuntary, and is an equilibrium state. In M. Sebastiani (ed). The notion of equilibrium in the Keynesian theory. Palgrave Macmillan,1992. https://doi.org/10.1007/978-1-349-22086-1-11
17. Kemi AO. Reduction of unemployment in Nigeria through agriculture (A case study of FCT poultry farming). World Journal of Innovative Research,2019,6(2),139-141.
18. Megbowon ET, Ojo OS, Olasehinde TJ. Agro-processing output and agricultural sector employment: Evidence from South Africa: Acta Universitatis Danubius Economica,2017,13(2),174-184.
19. Ministry of Budget and National Planning. Economic recovery and growth plan: 2017-2020. Federal Republic of Nigeria, 2017.
20. Mireri PC. Assessment of the contribution of urban agriculture to employment, income and food security in Kenya: A case of Kisumu municipality. African Journal of Agricultural Research,2013,8(23),2884-2896. https://doi.org/10.5897AJARIO.656.
21. Moseman AH. Building agricultural research systems in the developing nations. New York, Agricultural Development Council,1970.
22. Mouhammed AH. Important theories of unemployment and public policies. Journal of Applied Business and Economics,2011,12(5),100-110.
23. Njoku A, Ihugba O. Unemployment and Nigerian economic growth (1985-2009). Mediterranean Journal of Social Sciences,2011,2(6),23-32.
24. Nwaimo CE. Applied principles of economics for schools and professional. Supreme Publishers,2009.
25. Ogbalubi LN, Wokocha CC. Agricultural development and employment generation: The Nigeria experience. *IOSR* Journal of Agriculture and Veterinary Science,2013,2(2),60-69.

26. Ogbanga A. Agricultural development and employment generation in Nigeria. International Journal of Advanced Studies in Ecology, Development and Sustainability,2018,5(1),1-22.
27. Ohale L, Onyema JI. Foundations of macro-economics. Springfield Publishers,2002.
28. Olukemi AO. The role of agriculture in job creation for national development in Nigeria. International Research Journal of Engineering and Technology,2018,5(09),223-228.
29. Olukoyode EM, Alimi OY. Fiscal policy tools, employment generation and sustainable development in Nigeria. Acta Universitatis Danubius Economica,2018,14(3),186-199.
30. Ruttan VW. Induced innovation and agricultural development. Food Policy,1977,2(3),196-202.
31. Saheed ZS, Alexander AA, Isa AA, Adeneye OA. Anchor Borrower programme on agricultural commodity price and employment generation in Kebbi State, Nigeria. European Scientific Journal,2018,14(13),240-255. https://doi.org/10.19044/esj.zors.v14n13p240
32. Smith R, Zoega G. Keynes, investment, unemployment and expectations. International Review of Applied Economics,2009,23(4),427-444. https://doi.org/10.1080/02692170902954767
33. Sobohein R, Mathew O, Gershon O, Ogunbiyi T, Nwosu E. Agricultural development, employment generation and poverty reduction in West Africa. The Open Agriculture Journal,2019,13,82-89. https://doi.org/10.2174/1874331501913010082.
34. Stakman EC, Bradfield R, Mangelsdorf PC. Campaigns against hunger. Harvard University Press,1967.
35. Udemezue JC, Osegbue EG. Theories and models of agricultural development. Annals of Reviews and Research,2018,1(5),134-137.
36. Wossen T, Ayele S. Ethiopia's agricultural transformation: Agribusiness contribution to reducing youth unemployment. Institute of Development Studies Bulletin,2018,49(5),15-30. https://doi.org/10.19088//968-2018.171