

Unemployment and Economic Growth in Nigeria (1990-2016)

¹Dr. Ewubare, Dennis Brown & ²Ushie, Ushang Alberta

*Department of Agricultural and Applied Economics
Rivers State University Nkpolu-Oroworukwo Port Harcourt*

Abstract

This study examined the link between unemployment and economic growth in Nigeria during 1990-2016. The specific objectives are to determine how unemployment distribution across sexes (male and female) and age groups (youths between 15-24 years) affect economic growth. The gross domestic growth rate was used to capture the extent of economic growth and data on the variables were sourced from World Bank World Development Indicators. The methods of data analysis include descriptive statistics, Augmented Dickey-Fuller test for unit root and Autoregressive Distributed Lag bounds test for cointegration amongst others. The Augmented Dickey-Fuller unit root test results show that the variables are mixed integrated with GDP growth rate being integrated of order zero $I(0)$ while the other variables are integrated of order one $I(1)$. Additionally, the calculated F-statistic (28.059) of the Autoregressive Distributed Lag bounds test exceeded the corresponding upper bound critical value (4.35), indicating that the variables have long run relationship. The ARDL short run estimates reveal that male unemployment at lag 3 has significant negative impact on GDP growth rate. 1% increase in male unemployment, on the average, contracts GDP growth rate by 257.044%. Similarly, GDP growth rate is equally contracted by the contemporaneous and second lag of female unemployment in the short run. The long run estimates indicate female unemployment is negatively related to GDP growth while youth unemployment impacted positively to GDP growth rate. However, the impact of male unemployment on GDP growth rate is positive, but insignificant at 5 percent level. The F-statistic with a probability value of 0.0052 indicates that the explanatory variables are collectively significant in explaining changes in the GDP growth rate. The recommendation proffered based on the findings is that policy strategies for rapid and sustained growth in Nigeria should prioritize employment generation by creating new employment opportunities and expanding existing ones in order to adequately absorb the increasing labor force.

Keyword: *Male unemployment, Female unemployment, Youth unemployment, Economic growth*

Corresponding Author: Ushie, Ushang Alberta

Background to the Study

Achieving the macroeconomic goals of any country involves maintaining price stability, achieving full employment, and attaining the highest level of growth and development. The second goal, which is achieving full employment means maintaining a zero unemployment level. This is because full employment is the absence of unemployment of any kind. But it is a clear fact that zero unemployment cannot be achieved by any country, because there is always a level of voluntary unemployment (that is, people who are able to work but decide to be unemployed). Unemployment is an important determinant of the level of growth and development which a country can attain.

According to Seer (1969), a country cannot claim to be developing and yet experience a high level of poverty, unemployment, and inequality. This shows the important role unemployment plays in the process of economic growth. Unemployment has been one of the greatest economic challenges faced by the Nigerian economy and over the years has maintained a rising trend despite several efforts by the government. Nigeria's struggle to create jobs keeps getting worse. The government has tried to boost employment, mainly by threatening businesses that cut jobs as well as trying to find work for those who are laid off. Local banks were threatened with a possible withdrawal of their licenses for sacking workers.

New data published by Nigeria's National Bureau of Statistics (NBS) pegs the unemployment rate at 14.2% in the last quarter of 2016, up from 13.9% in the preceding quarter. It's the ninth consecutive quarter that the unemployment rate in Nigeria has increased. The socio-economic effect of unemployment includes: fall in national output, increase in rural-urban migration, waste of human resources, high rate of dependency ratio, poverty, depression, frustration, all sorts of immoral acts and criminal behavior e.g. prostitution, armed robbery etc.

Labor-market reforms that lower wage costs and thus increase employment will, of course, also cause output to grow during the adjustment process (Jelilov, Gylych; Onder, Evren, 2016). In the short run, the relationship between economic growth and the unemployment rate may be a loose one. It's not unusual for the unemployment rate to show sustained decline sometimes after other broad measures of economic activity have turned positive. Hence, it is commonly referred to as a lagging economic indicator. Thus, the key to the long-run relationship between changes in the rates of GDP growth and unemployment is the rate of growth in potential output as an unobservable measure of the capacity of the economy to produce goods and services, when available resources, such as labor and capital, are fully utilized (Jelilov, Gylych; Chidigo, Mary; Onder, Evren, 2016).

Statement of the Problem

Unemployment is one of the developmental problems that face every developing economy in the 21st century. International statistics show that industrial and service workers living in developing regions account for about some percentage of the unemployed (Patterson et al 2006). According to Bello (2003), the problem of

unemployment has always been an issue of great concern to the economists, policy makers and economic managers alike; given the devastating effect on individuals, the society and the economy at large.

A cursory look at the unemployment and economic growth trend of Nigeria shows that high unemployment hinders growth. The government, however, has employed different policy measures to combat unemployment in order to encourage growth. They range from increases in government expenditure, giving industrialists tax holiday to encourage industrialization and even the use of monetary policy instrument such as reducing commercial bank lending rate to encourage investment through borrowing. Recently, the idea of self-employment (Entrepreneurship) is gaining popularity. This, the government encourages by giving young entrepreneurs funds to start up their own business. Despite all these efforts, unemployment continues to be on the increase and hinders growth. It is against this background that this paper seeks to investigate how unemployment impacts on economic growth, in order to proffer solutions as to how to accelerate the rate of growth of the Nigerian economy.

Literature Review

Theoretical Framework

Classical theory of Unemployment

Pigou (1933), McDonald and Solow (1981) examined the classical theory of unemployment and made a case that the labour market comprises of the demand for and supply of labour. Demand for labour is a derived demand, gotten from the falling off of the marginal product of labour. The demand curve is an inverse relationship of the real wage in the sense that if real wages increase, the quantity demanded for labour will fall and vice versa. The supply of labour is gotten from employee's decision whether to spend part of their time working or not working. Supply of labour has a direct relationship with the real wage, because if the real wage increases, employees supply more labour hours. The classicalists opined that occasionally wages would decrease and there would be no unemployment except for frictional unemployment which is caused by time delay between leaving one job and starting another. This school of thought proposes that urban unemployment problem can be traced to the fault of employees and the numerous trade unions power. They believed strongly in market forces.

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 known as demand deficient unemployment occurs when there is no aggregate demand in the economy. The Keynesian economist holds that increased unemployment is as a result of fall in the aggregate demand in an economy.

The Keynesian framework, as examined by Thirlwal (1979), Grill and Zanalda (1995) and Hussian and Nadol (1997), postulate that increase in employment, capital stock and technological change are largely endogenous. Thus the growth of employment is demand determined and that the fundamental determinants of long term growth of output also influence the growth of employment. In the Keynesian theory (1936), employment depends upon effective demand which results in increased output, output creates income and income provides employment. He regards employment as a function of income. Effective demand is determined by aggregate supply and demand functions.

Conceptual Review Unemployment

Unemployment is a situation in which those who are able and willing to work at the prevailing wage rate do not find job. According to the International Labour Organization (ILO), only those belonging to the age group of 15 to 65 years should be included in the labour force of a country. Unemployment may also be defined as the gap between the potential, full employment" and the number of employed persons. Briggs (1973) defined unemployment as the difference between the amount of labour at current wage rate and working conditions and the amount of labour not hired at these levels. However, Gbosi (1997) defined unemployment as a situation in which people who are willing to work at the prevailing wage rate are unable to find jobs.

The unemployment rate is the number of an economically active population who are without work but available for and seeking for work, including people who have lost their jobs and those who have voluntarily left work (World Bank 1998). Nicholas (2000), says, a person is unemployed if he or she is eligible for work but does not have a job. Volkova (1986) maintained that an unemployment situation is in other words called mass-unemployment when the number of qualified manpower who are unemployed is considerably enough or outnumber that of those in gainful employment.

Keynes (1935) stated that the term unemployment is used to apply in literal sense to all persons without work, but it has come to have more specific meaning in contemporary realization of social and economic policy. Aguene (1991), defined unemployment as the number of people in the population who are willing and offer themselves for employment but could not be employed because of lack of vacancies for them. Fajana(2000) and Standing(1983) opined that unemployment can be described as the state of wordlessness experienced by persons who are members of the labour force who perceived themselves and are perceived by others as capable of work. The international labour force organization (ILO) defines unemployment as the proportion of the labour force which was available for but did not work for at least one hour in the week proceeding the survey period.

Nigerian Economic Growth

Nigeria is a middle income, mixed economy and emerging market, with expanding financial, service, communications, and entertainment sectors. It is ranked 30th in the

world in terms of GDP as of 2011, emergent, though currently underperforming manufacturing sector is the third producing a large proportion of goods and services for the West African region. The current administration, led by President Muhammadu Buhari, identifies fighting corruption, increasing security, tackling unemployment, diversifying the economy, enhancing climate resilience, and boosting the living standards of Nigerians as main policy priorities. Nigeria's federated structure gives significant autonomy to states. Between 2006 and 2016, Nigeria's GDP grew at an average rate of 5.7 percent per year, as volatile oil prices drove growth to a high of 8 percent in 2006 and to a low of -1.5 percent in 2016. While Nigeria's economy has performed much better in recent years than it did during previous boom-bust oil-price cycles, such as in the late 1970s or mid-1980s, oil prices continue to dominate the country's growth pattern.

It is the largest economy in the West African Region, 1st largest economy in Africa (before South Africa and Egypt), and on track to becoming one of the 20 largest economies in the world by 2025. The real Gross Domestic Product (GDP), measured in 1990 basic prices grew by 7.9 per cent, compared with 7.0 percent in 2009. Growth in 2010 was attributed largely to the performance of the non-increase in oil sector output. The performance of the Nigerian economy was 8.0% in 2010, driven predominantly by crop production, wholesale and retail trade and telecommunications sectors, which accounted for 28.0%, 28.8% and 21.4% of real GDP growth respectively. Economic growth is expected to have remained positive in the second half of 2017, averaging about 1.0 percent for 2017, driven by the continued recovery of oil production, sustained growth in agriculture, and the positive impact on investment and other private sector activities from the improved availability of foreign exchange to support imports. Nigeria has made significant progress in socio-economic terms over the last 15 years. Between 2005 and 2015, Nigeria's Human Development Index value increased by 13.1 percent. However, the country continues to face massive developmental challenges, which include reducing the dependency on oil and diversifying the economy, addressing insufficient infrastructure, and building strong and effective institutions, as well as governance issues, public financial management systems, human development indicators, and the living conditions of the population.

Empirical Literature

In an attempt to analyze the relationship between unemployment and economic growth, a lot of researchers have applied empirical data to ascertain the nature of the relationship. Tabuina and Daveria (2000) found empirical support by raising a hypothesis that unemployment has a negative effect on economic growth while Layard and Nickell (1999) cannot find the labour market institution that increased unemployment also lowers economic growth, it is quite possible that some institutions that affect unemployment also affect economic growth and the level of output in Nigeria. Ogunrinola and Sodipe (2011) estimated a simple regression model using the Ordinary Least Square (OLS) method. The result showed that a positive and statistically significant relationship exists between employment level and GDP growth in Nigeria. Khan, Khattak and Hussain (2012) investigated the inter-relationship of GDP growth and unemployment in Pakistan. They used time series data from 1960 to 2005. They initially used the Augmented Dickey-Fuller

(ADF) test and the results were stationary at first difference. Then they used the Johansen Co-integration test. Their results showed that 1% increase in GDP reduced unemployment by 0.63% on the one hand, and that 1% decrease in unemployment increased GDP by 7.25% on the other hand. Their results also showed that GDP in the long run had a negative relationship with unemployment.

Downes (1998) investigated the necessary condition for reducing the unemployment rate in Trinidad and Tobago. From the period 1971-1996. Using the error correction model estimated by OLS (ordinary least square) instrumental variables, he found that in both long and short runs, changes in Real Gross Domestic product (RGDP) and Real Average Earning (RAE) have a statistically impact on changes in the unemployment rate. While increase in GDP reduces the unemployment rate in both short and long terms but lowers it in the short-run, increase in real average earning increase the unemployment rate in the long-run. Shua Li and Zi-Juan Liu (2012) conducted a study to determine the relationship among Chinese unemployment rate, economic growth and inflation. They employed Granger causality test, unit root, cointegration, VAR and VEC model. The study showed that unemployment impacted negatively on economic growth while inflation impacted positively on growth in China. Olawunmi Omitogun and Adedayo Emmanuel Longe in their study investigated the impact of unemployment on economic growth in Nigeria in the 21st century using a Vector Autoregressive (VAR) approach using a secondary data spanning from 1986 to 2015. Different methods such as the Augmented Dickey Fuller (ADF) test, Johansen cointegration test, VAR model, impulse response test and variance decomposition test were employed to analyse the data. It was observed that the impact of unemployment varies over time as efforts towards eradicating it are being made by the government in the country. The implication of their study was to inform researchers on the VAR model as an appropriate approach for dynamic analysis, to urge academicians to be more informative on the dynamic effects of unemployment in the economy, and to provide guidance to the government on the appropriate policy to adopt to tackle the issue of unemployment and inflation in the country.

In Nigeria context, Obadan and Odusola (2005) discovered that unemployment and growth are inversely related. It was also discovered that growth response to unemployment varied among sectors of the economy. For example, employers in the industrial sector use less labour to accomplish high volume of production thereby leading to unemployment of workers. The researcher analyzed the casual link between unemployment and productivity in different sectors of Nigerian economy except service sectors. Fuad M. Kreishan in his research in 2011 investigated the relationship between unemployment and economic growth in Jordan through the implementation of Okun's law. Using annual data covering the period 1970-2008, time series techniques are used to test the relation between unemployment and economic growth and to obtain estimates for Okun's coefficient. Namely, the study used Augmented Dickey-Fuller (ADF) for unit root, cointegration test and a simple regression between unemployment rate and economic growth. The results reveal that Okun's law cannot be confirmed for Jordan. Thus, it can be suggested that the lack of economic growth does not explain the unemployment problem

in Jordan. Moru. J (2005) posited that the unemployment caused by the movement of labour forces from agriculture production to secondary production in Nigeria amongst the unskilled labour constitutes disaster to the economic development in furtherance of the effects of unemployment to the Nigerian economy and attainment of economic growth, estimates indicate that attaining high economic growth is possible if Nigeria can scale up its ability to effectively use its resources, through sustainable growth over time, improved policies, increased trade and investment and improvement in human capital development.

Research Methodology

Research Design

The quasi-experimental research design was used in building up this seminar work. This motivation for this research is based on its attribute of relying on already existing data, especially from documentary sources.

Data Collection Methods and Sources

The data required for this study are secondary data. The collection process spanned from 1990 to 2016. The data source is the World Bank WDI.

Data Analysis Techniques

This study applied ARDL in estimating the short and long run effects of each of the explanatory variables on economic growth. The motivation for the ARDL developed by Pesaran and Shin (1999) is its capacity in estimating robust outcomes, including both levels and first difference stationary variables in the model and combining both the short and long effects in a single equation amongst others. In addition to the ARDL estimation, descriptive statistics was also applied for analyzing the trends in each of the series. The required diagnostics tests for the ARDL estimation are explained as follows:

Unit Root Test: The time series process of the variables is determined through stationarity test. The Augmented Dickey and Fuller (1981) approach is relied upon for the unit root test. The null hypothesis of a unit root is tested against the alternative hypothesis of no unit root at 5 percent level. The model for the unit root test is formalized below:

$$\Delta N_t = b_0 + b_1 N_{t-1} + \sum_{i=1}^m z_i \Delta N_{t-i} + \lambda_t \quad \dots \quad (1)$$

Where: N_t = variables included in the model
 b_1 and z_i = parameter estimates
 m = lag length selection process
 Δ = First difference operator
 λ_t = Random disturbance term

It is expected that none of the variables be integrated of order two I (2) for it to be added* in the ARDL model.

Cointegration test

The ARDL bounds test approach to co-integration was utilized in checking whether or not long run relationship exists among the variables. It is otherwise known as the Wald test for cointegration which employs F-statistics. The equation for the ARDL bounds test can be generalized as:

$$y_t = \alpha + \sum_{i=1}^k \beta_i x_i + \varepsilon_t \quad (2)$$

Where α is a constant, x_i is the vector of regressors k and ε_t are respectively the lag length and disturbance term. The decision rules are that if the calculated F-statistic is greater than the upper bound critical value, the null hypothesis of no long run relationship will be rejected, but if it is less than the upper bound critical value, the null hypothesis cannot be rejected. The test is considered as inconclusive if the calculated F-statistic falls between the lower and upper bound critical values.

Model Specification

In the spirit of the ARDL process, a single equation model was specified for this study. GDP growth rate, proxy for economic growth was included in the model as dependent variable while male unemployment, female unemployment and youth unemployment are the explanatory variables in the model. The model is specified in the functional form as:

$$GDPR = f(MUNE, FUNE, YUNE) \quad (3)$$

Where: GDPR, MUNE, FUNE, and YUNE are GDP growth rate, male unemployment, female unemployment and youth unemployment.

Equation (3) is expressed in dynamic form to capture the short and long run estimates of ARDL model as:

$$\Delta GDPR_t = \gamma_0 + \alpha_1 GDPR_{t-1} + \alpha_2 MUNE_{t-1} + \alpha_3 FUNE_{t-1} + \alpha_4 YUNE_{t-1} + \sum_{i=1}^h \beta_1 \Delta GDPR_{t-1} + \sum_{i=1}^h \beta_2 \Delta RGDP_{t-1} + \sum_{i=1}^h \beta_3 \Delta MUNE_{t-1} + \sum_{i=1}^h \beta_4 \Delta FUNE_{t-1} + \sum_{i=1}^h \beta_5 \Delta YUNE_{t-1} + U_{it} \quad (3.4)$$

Where: GDPR, MUNE, FUNE and YUNE are defined earlier in equation (3.3) Δ is the first difference notation. α_1, α_2 are the long run coefficients of the explanatory variables, $\beta_1 - \beta_4$ are the short run slope coefficients.

Results and Discussion

This chapter embodies the time series data covering the study period (1990-2016) and the results from the diagnostics tests as the estimated regression model.

Descriptive Statistics

The descriptive statistics are summarized in Table 1

Table 1 Summary of Descriptive Statistics

	GDPR	MUNE	FUNE	YUNE
Mean	5.384261	5.703296	7.385074	6.334778
Median	4.411065	6.019000	7.892000	6.777000
Maximum	33.73578	6.710000	8.805000	7.600000
Minimum	-1.541057	3.774000	4.956000	4.172000
Std. Dev.	6.590083	0.818023	1.124580	1.012420
Jarque-Bera	175.1870	3.978043	3.636002	3.730744
Probability	0.000000	0.136829	0.162350	0.154839
Observations	27	27	27	27

Source: Researcher's computation from E-views 9

With reference to Table 1, the descriptive statistics show that during 1990-2016, the GDP growth rate averaged 5.38%, while male unemployment, female unemployment and youth unemployment averaged 5.70%, 7.38% and 6.33% respectively. The standard deviation indicates that the observations for the unemployment distribution clustered around their respective mean various while that of GDP growth deviated from its mean value. More so, the Jarque-Bera statistics and the corresponding probability values which are less than 0.05 reveal that all the various except GDP growth rate are normally distributed at 5 percent level. Hence, the null hypotheses of normal distributed cannot be rejected for the unemployment measures.

Stationarity Test

The unit root test for stationarity was carried as a pre-condition to the estimation of the regression model. This is necessitated by the assumption that time series data tend to depict stationarity processes. The results are summarized in Table 2

Table 2: Summary of ADF unit root test results

Variable	Levels test results		First difference test results		Order of integration
	t-statistic	Lag order	t-statistic	Lag order	
GDPR	-4.259 (0.012)	0	NC	NC	I(0)
MUNE	-1.934 (0.608)	0	-4.337 (0.011)	1	I(1)
FUNE	-2.041 (0.553)	0	-4.185 (0.016)	1	I(1)
YUNE	-2.277 (0.431)	0	-4.205 (0.015)	1	I(1)

Source: Researcher's computation from E-views 9

Note: Figures in parenthesis are the probability values, NC implies not computed, I(0) and I(1) denote integrated of order zero and one respectively while the lag order was selected automatically using Schwarz information criterion (SIC).

Table 3: ARDL Bounds test for Cointegration

Series: GDPR MUNE FUNE YUNE		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	28.059	3
Critical Value Bounds		
Significance	Lower Bound	Upper Bound
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Researcher's computation from E-views 9

Note: k = number of independent variables in the model

The unit root test results in Table 2 show that only GDP growth rate is stationary at levels. This is established from the probability values of the t-statistic at the levels test result which is less than 0.05. The other variables are found to be stationary at first difference. These results suggests that the variables are mixed integrated with GDP growth rate being integrated of order zero $I(0)$ while the other variables are integrated of order one $I(1)$. Additionally, the results of ARDL bounds test for cointegration in Table 3 indicate that the variables in the model are cointegrated. In other words, they have long run relationship given that the computed F-statistic (28.059) exceeded the corresponding upper bound critical value (4.35) at 5 percent level. The results of unit root and cointegration tests satisfy the condition for estimating the ARDL model.

Estimated ARDL model

The ARDL process (2, 4, 4, 4) was decided automatically using Akaike information criterion (AIC). The short run and long run estimates are reported in Table 4.5

Table 4: Results of ADRL model

Dependent Variable: GDPR					
Short run Form					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	
D(GDPR(-1))	1.174	0.186	6.288	0.001	
D(MUNE)	-2.657	6.661	-0.398	0.706	
D(MUNE(-1))	48.049	35.556	1.351	0.234	
D(MUNE(-2))	39.345	31.549	1.247	0.268	
D(MUNE(-3))	-257.044	100.490	-2.557	0.051	
D(FUNE)	-2927.548	373.051	-7.848	0.001	
D(FUNE(-1))	5113.088	791.119	6.463	0.001	
D(FUNE(-2))	-2394.663	418.635	-5.720	0.002	
D(FUNE(-3))	599.365	239.729	2.500	0.055	
D(YUNE)	3387.101	429.277	7.890	0.001	
D(YUNE(-1))	-5983.603	930.387	-6.431	0.001	
D(YUNE(-2))	2754.546	484.578	5.684	0.002	
D(YUNE(-3))	-470.610	188.242	-2.500	0.054	
ECM(-1)	-1.2644	0.219	-5.782	0.002	
Long Run Coefficients					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	
MUNE	62.0189	50.834	1.220	0.276	
FUNE	-716.816	272.252	-2.632	0.046	
YUNE	765.982	289.1579	2.649	0.045	
C	80.227	47.2795	1.696	0.150	
R-squared	0.97		Prob.(F-stat.)	0.0052	

Source: Researcher's computation from E-views 9

Post-estimation Tests

The post-estimation tests result for the regression result in Table 4 are reported in Table 5

Table 5: Post-estimation test results for the ADRDL model

Test type	Test Statistic	Value	P-value
Breusch-Godfrey Serial Correlation LM Test	Chi-square stat.	3.361	0.6165
Heteroscedasticity Test (ARCH)	Chi-square stat.	12.859	0.746
Normality Test	Jarque-Bera stat.	5.552	0.062
Ramsey RESET test	F-statistic	7.875	0.115

Source: Researcher's computation from E-views 9

It was found from the result that GDP growth rate lagged for one period has significant positive impact on current level of GDP in the short run. This implies that prediction of future growth rate in GDP can be achieved using past values of GDP with high level of precision. The result also reveals that the male unemployment at lag 3 has significant negative impact on GDP growth rate in the short run. 1% increase in male unemployment, on the average, decreases GDP growth rate by 257.044%. Similarly, GDP growth rate is equally contracted by the current value and second lag of female unemployment in the short run. The behavior of youth unemployment in the short run is mixed. While the contemporaneous and lag 2 of youth unemployment contributed positively to GDP

growth rate, the first and third lags are negatively relative to GDP growth. The coefficient of ECM (-1.264) indicates that any sort run disequilibrium in the system can be reconciled instantaneously to arrive at equilibrium position in the long run. The long run estimates indicate female unemployment is negatively related to GDP growth while youth unemployment impacted positively to GDP growth rate. However, the impact of male unemployment on GDP growth rate is positive, but insignificant at 5 percent level. The F-statistic with a probability value of 0.0052 indicates that the explanatory variables collectively significant in explaining changes in the GDP growth rate. Again, the R-squared (0.97) suggests that the model is well fitted as the regressors collected account for 97% variations in GDP growth. The post estimation test results reveal that the model is not serially correlated and heteroskedastic. The results also indicate that the model is properly specified and the residuals are normally distributed at 5 percent level.

Conclusion and Recommendations

The implications of unemployment macroeconomic outcomes are often mirrored by its dampening effects on economic growth. This study centered on the impacts of unemployment distribution across sexes (male and female) and age group (youth population) on economic growth, captured by GDP growth rate in Nigeria between 1990 and 2016. The results show evidence of mixed outcomes with combinations of negative and positive effects of unemployment measures on GDP growth rate in both short and long run. While male unemployment significantly contracted GDP growth rate in the short run, its impact in the long run is positive, but statistically insignificant. Female unemployment also significantly reduced GDP growth rate in short run, but its behavior in the long run shows diverse outcomes. The results further reveal that youth unemployment generated varying effects in both short run and long run. Hence, it is concluded that unemployment is detrimental to rapid and sustainable growth of the Nigerian economy. It is therefore, recommended that policy strategies for rapid and sustained growth in Nigeria should prioritize employment generation by creating new employment opportunities and expanding existing ones in order to adequately absorb the increasing labor force.

Refereces

- Abdul-Khaliq, S., Soufan, T., & Shihab, R. A. (2014). The relationship between unemployment and economic growth rate in Arab Country. *Journal of Economics and Sustainable Development*, 5 (9), pp. 56-59.
- Akeju, K. F. & Olanipekun, D. B. (2014). Unemployment and economic growth in Nigeria. *Journal of Economics and Sustainable Development*, 5 (4), pp. 138-144.
- Alanana, O. O. (2003). Youth unemployment in Nigeria: some implications for the third millennium. *Global Journal of Social Sciences*, 2 (1), pp. 21-26.
- Amassoma, D., & Nwosu, P. I. (2013). The impact of unemployment rate on productivity growth in Nigeria: an error correction modeling approach. *International Journal of Economics and Management Sciences*, 2 (08), pp. 01-13.
- Babalola, S. J., Saka, J. O. & Adenuga, I. A. (2013). The validity of Okun's law in Nigeria: a difference model approach. *Asian Economic and Financial Review*, 3 (12), pp. 1598-1608.
- Bello, N. (2003). Meeting the challenge of risking unemployment in employment, *Policy & Strategy Formulation Mission to Nigeria*, Report Submitted by The ILO 21st Oct-22nd November
- Bhattarai, K., (2016). Unemployment-inflation trade-offs in OECD countries. *Economic Modelling*, pp. 58, 93-103.
- Briggs, J. E (1973). Unemployment statistics and what they mean. *Monthly labour bulletin*, Washington DC; US Department of Labour.
- Calmfors, L. & Holmlund, B. (2000). Unemployment and economic growth: A partial survey. Swedish, *Economic Policy Review* 7 107-153.
- Ejikeme, J. N. (2014). Unemployment and poverty in Nigeria: A link to national insecurity. *Global Journal of Politics and Law Research*, 2, (1), pp. 19-35.
- Ekrame, B., Dramane, C., & Christophe, R. (2012). Immigration, growth and unemployment: Panel VAR evidence from OECD Countries. *IZA Discussion Paper*, No. 6966.
- Fadayomi, T. O. (1992). *Migration development and urban policies in Sub Saharan Africa*, Ibadan: Codesria Book Series.
- Feridun, M., & Akindele, S. T. (2006). The crux of the matter, in Nigerian economy: Essays on economic development ed. (Feridun and Akindele), Munich Personal RePEC Archive. *MPRA*, pp. 113.

- Grill, E. & Zanalda, G. (1995). *Growth and employment in developing countries: Where do we stand*. Working Papers No. 86, International Development Centre, Abuja, 26 October.
- Holden, S. & Sparman, V. (2013). *Do government purchases affect unemployment?* <http://folk.uio.no/sholden/wp/fiscal-u.pdf>. (Accessed August 28, 2013).
- Hussain, M. N. & Naldo, C. (1997). *Growth and the demand side: The case of some African countries*. Working Papers No. 28, African Development Bank Economic Research, Abidjan, 23 April.
- Imran, A. & Iba, S. (2014). *Examining relationship between macroeconomic variables using VAR approach*, Proceedings of the 2014 International Conference on Industrial Engineering and Operations Management. Bali, Indonesia, January 7 – 9.
- Jelilov, G., Kachallah, I., & Fatima, O. E. (2016). An appraisal of the impact of the dearth of pre-hospital emergency medical services to road traffic accident victims in Nigeria, *International Journal of Humanities and Social Science Invention*, 34-40.
- Jelilov, G. (2016). The impact of interest rate on economic growth example of Nigeria, *African Journal of Social Sciences*, 51-64.
- Jelilov, G. & Onder, E. (2016). Entrepreneurship: Issues and solutions evidence from Nigeria. Pyrex, *Journal of Business and Finance Management Research*, 10-013.
- Jelilov, G., Chidigo, M. & Onder, E. (2016). Firm size and firm growth: Testing gibrat's law on 17 Nigeria manufacturing industry (2000-2011), *The International Journal of Social Sciences and Humanities Invention*, 1869-1879.
- Keynes, J. M. (1936). *The general theory of employment: Interest and money*. London: Macmillan Press.
- Li, C. & Liu, Z. J. (2012). Study on the relationship among Chinese unemployment rate, economic growth and inflation. *Advances in Applied Economics and Finance*, 1 (1), pp. 1-6.
- McDonald, I. & Solow, R. (1981), Wage bargaining and employment, *American Economic Review*, 71 (5) pp. 896-908.
- Madito, O. & Khumalo, J. (2014). Economic growth - unemployment nexus in South Africa: VECM approach. *Mediterranean Journal of Social Sciences*. 5 (20), pp. 79-84.
- Muhammad, S. (2014). Effect of inflation and unemployment on economic growth in Pakistan. *Journal of Economics and Sustainable Development*. 5 (15), pp. 103-106.

- Muhammad, S. A., Oye, N. D. & Inuwa, I. (2011). Unemployment in Nigeria: Implication on the gross domestic product (GDP) over the years. *Int. J. ECO. RES*, 2 (1), pp. 66-71.
- Okun, A. M. (1962). Potential GNP: Its measurement and significance, American Statistical Association, *Proceedings of the Business and Economics Statistics Section*, pp. 98-104.
- Onwanchukwu, C. I. (2015). Does unemployment significantly impact on economic growth in Nigeria? *Global Journal of Human-Social Science: E Economics*, 15 (8), pp. 23-26.
- Osinubi, K. (2006). The political crisis & solution, *Vanguard July 19*.
- Ozei, H. A., Sezgin, F. H., & Topkaya, O. (2013). Investigation of economic growth and unemployment relationship for G7 Countries using panel regression analysis. *International Journal of Business and Social Science*. 4 (6), pp. 163-171.
- Papapetrou, E. (2001). Oil price shocks, stock market, economic activity and employment in Greece. *Energy Economics*, 23 (5), pp. 511-532.
- Patterson, N., Okafor, O. & Williams, D. (2006). Globalization and employment generation: Evaluating the impact of trade on aggregate employment in Nigeria's Industrial Sector. *Proceedings of Nigerian Economic Society, 2006 Annual Conference held at Abuja*
- Phillips, A. W. (1958). The relationship between unemployment and the rate of change of money wages in the United Kingdom 1861-1957. *Economica*, 25 (100), pp. 283-299.
- Pigou, A. C. (1933). *The theory of unemployment*. London: MacMillan and Co.
- Sadiku, M., Ibraimi, A., & Sadiku, L. (2015). Econometric estimation of the relationship between unemployment rate and economic growth of FYR of Macedonia. *Procedia Economics and Finance*, pp. 19, 69 – 81.
- Schlicht, E. (2011). *Wage setting in modern labor markets: Neither fair nor efficient*, Working Paper No. 26, Institute of Labor Economics, Bonn Germany, 4 April.
- Seer, D. (1969). The meaning of development. *International Development Review* 11 (4) 3-4.
- Taylan, T. D. (2012). Macroeconomic variables and unemployment: The case of Turkey. *International Journal of Economics and Financial Issues*, 2 (1), pp. 71-78.
- Thirlwill, H. L. (1979). Estimating the determinants of the unemployment duration for College graduates in Taiwan. *Applied Economics Letters*, 6. (10), pp. 773-798.

Udabah, S. I. (1999). *Basic economics theory and practice*. Enugu: Linco Press Nigeria Limited.

Walterskirchen, E. (1999). *The relationship between growth, employment and unemployment in the EU European economists for an alternative economic policy (TSERNETWORK)*. Workshop in Barcelona, 16 to 18 September.