

**THE EFFECT OF UNEMPLOYMENT ON ECONOMIC
GROWTH IN NIGERIA (1980-2010)**

BY

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EC/2009/713

**DEPARTMENT OF ECONOMICS
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CARITAS UNIVERSITY, AMORJI-NIKE
ENUGU STATE**

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TITLE PAGE

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GROWTH IN NIGERIA**

**A PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF BACHELOR IN SCIENCE
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DEDICATION

I dedicate this work to GOD Almighty, to my loving parents MR and MRS ANULIGO for all their support thought out the pursuit of my academic career.

I also extend my dedication to my friends Festus, Samuel, Williams for their support, and to my siblings. I love you all.

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My gratitude goes to God Almighty for His blessings in my life. I am grateful for his endless love, protection, guidance, grace and showers of blessings upon me and my family.

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My profound gratitude goes to my friends and room mates Williams, Festus, Samuel, Abiodun, Chinedu, Cynthia, Udo, Jude, Samson.

I pray that almighty God will reward you all Amen.

ABSTRACT

The study was designed to investigate the effect of unemployment on economic growth in Nigeria for a period of 31 years (1980-2010). Its focus is to determine the relationship between unemployment and economic growth in Nigeria (GDP). The finding was that unemployment has a positive but insignificant impact on the gross domestic product (GDP) of the Nigeria economy. Despite the fact that the effect of unemployment on economic growth is not significant, its positive coefficient suggests that the unemployment rate is also increasing over time, so the study recommends policies to reverse this trend. The study included that the government should formulate policies that will help in the proper check of the annual unemployment rate, and its outcome on the effort to reduce it, in order to know how to battle it in the coming year.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

In the developing economies, unemployment has been and still is the countries number one economic problem. This problem has posed a great challenge to many countries [both developed and developing].it has been categorized as one of the serious delay to social progress. Apart from representing a big waste of a countries man power resources it generates welfare losses in terms of low output thereby leading to lower income and economic wellbeing.

Unemployment can either be voluntary or involuntary voluntary in the sense that one chooses not to work because he or she has means of support other than employment. On the other hand involuntary unemployment exists when persons who are eligible and willing to work at the prevailing rate of pay are unable to find work or employment [anyanwa 1995].

In recent times the incidence of unemployment in Nigeria has been a wide spread cutting across all faces of age groups education state and geographical entities.

The unemployment problem was more rampant in Nigeria in the 1980 than any other period for instance the unemployment rate rose from 4.3 in 1976 to 64 in 1980.it was also recorded between 5.3 and 64 during 1980 to 1985 period.

Government and policy makers are increasingly finding it difficult to grapple successfully with youth unemployment this high rate of unemployment can be blamed on lack of adequate provision for job creation in development plans the over expanding educational growth and the desperate desire on the part of youths to acquire university education irrespective of course and course contents as a result a number of skills acquired from the university appear dysfunctional and irrelevant [Celine 1999].

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 all sorts of immoral acts and criminal behavior e.g. robbery etc all these can be categorized into no or low economic growth the social effect of unemployment brings to light the need to proffer possible solutions to salvage our nation Nigeria.

1.2 STATEMENT OF THE PROBLEM

In view of the prior observation unemployment has constituted a problem to the attainment of economic growth of the world in general but most especially in less developed countries.

The seriousness of unemployment has been enumerated to be youthful which constitutes the productive forces of the economy thus making the achievement of high economic growth practically a mirage in Nigeria within the given span of time [C B N 2004].

It is glaring that in 1960 and early 1970 Nigeria Malaysia Indonesia and other had similar income per capital GDP growth rates and underdeveloped political structure but today the Asian tigers have escaped underdevelopment and poverty because of the way their country was managed thereby leaving Nigeria behind [Ekpo 2004].

The economic measures adopted for long in Nigeria like structural adjustment programme could not crest the problem of unemployment to the economic growth of Nigeria economy instead 70 of Nigeria live below poverty line.

Using the time series data on unemployment in Nigeria between 1975 and 1996 two historical developments evolved out of the economic history of the country first the year 1974 which coincided with the oil boom and secondly the year 1986 which manifested the recession period following the oil boom. The understanding is that unemployment was still present during the oil boom in the 1980

However economist were bothered about the cause of reducing unemployment by government policies whether the trade off is worth it and whether the inflation rate that will be allowed will be favorable enough for the economy.

1.3 RESEARCH QUESTIONS

- ❖ Does unemployment have any significant impact on economic growth?

1.4 OBJECTIVE OF THE STUDY.

The broad objective of this study is to ascertain the effect of unemployment on economic growth in the Nigerian economy. The specific objective of this study includes;

- ❖ To determine the impact of unemployment on output level in the Nigerian economy.

1.5 RESEARCH HYPOTHESIS

This study is guided by the following hypothesis:

- ❖ Unemployment has no impact on economic growth in Nigeria.

1.6 SCOPE OF THE STUDY

The scope of the study is centered on the effect of unemployment on economic growth in the Nigerian economy. The research work is centered on thirty years duration from 1980 – 2010.

1.7 SIGNIFICANCE OF THE STUDY

Unemployment in Nigeria has been an issue of interest. A lot of policies and measures have been adopted to control unemployment, because it wastes away the productive years of the active population, moreover, the study will help reduce the declines of our economic growth.

It will provide information to the Nigerian government and youth who ignored agriculture in pursuit of white collar jobs.

Furthermore, it will provide useful information needed by government to fight unemployment and help create employment opportunities in Nigeria. And finally the study will serve as reference material for further studies.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 THEORITICAL LITERATURE

Here we would focus on the views and also the critical reviews on previous studies in the area of unemployment and economic growth.

Obandan and sagbamah(1997), observed that growth and employment move in the same direction. All things being equal, the higher the growth rate, the employment rate. A result to the foregoing is that growth and employment rate will fall, all things being equal, output is among other things, a function of employment, increase in employment will all things being equal, lead to increase in output and hence economic growth. On the other hand, reduction in employment (which is unemployment) will lead to decrease in output and hence economic growth. The foregoing shows that there is a negative correlation between growth and unemployment, therefore to reduce

unemployment, growth boosting policies should be formulated and be put in place.

Todaro(1985), viewed that a combination of the shortage of capital, raw materials, intermediate products, skilled and managerial human resources, with poorly functioning and insufficiently organized commodity and loan markets, poor transport and communication patterns existed among the rich nations. All these and many other structural and institutional factors were the real cause of unemployment in developing nations. As a result the simple that expanded government and private demand would be effective in the challenge of unemployment, which in most third world countries remained a mirage.

Moru (2005), posited that unemployment caused by the movement of labour forces from agricultural production to secondary production in Nigeria amongst the unskilled labour, constitutes disaster to the economic development in furtherance of the effects of

unemployment on the Nigerian economy and the attainment of economic growth, estimates indicates that attaining high economic resources, through sustainable growth overtime, improved policies, increased trade and investment, improvement in human capital development, however it is noted that in the attempt to raise resources for economic growth the government has proposed an international facility.

2.1.1 THE CLASSICAL THEORY OF UNEMPLOYMENT

TWO HIGH WAGES THEORY

The classical were the school of thought that emphasized the role of money in explaining the short term changes in national income.

Traditionally, this theory has been that unemployment has been looked upon in terms of aggregate.

Their view was that involving unemployment was a short term phenomena resulting from a discrepancy between the price level and the wage level. Unemployment was the result of two high wages.

At times the wage level in the classical view would be reduced and there will be no unemployment except for fictional search unemployment caused by time delays between quitting one job and starting another. The school viewed that the problem of urban unemployment is traceable to the fault of workers and the various trade unions' power. They believed strongly in the theory of supply and demand. Therefore it insists that urban unemployment is caused by supply of labour of more than the capacity of the economy.

Consequently the school argued that the demand for too high wages by worker without a corresponding increase in productivity, renders product costly thereby discouraging competitiveness among local industries and foreign industries. The implication of this trend is the reduction of sales, which further leads to mass retrenchment of workers, resulting to unemployment.

2.1.2 KEYNESIAN THEORY OF UNEMPLOYMENT

The ideas of the British economist, John Maynard Keynes in 1930's revolutionized thinking in several areas of macro economic, including unemployment, money supply and inflation.

Keynesian unemployment also known as demand deficient unemployment occurs when there is no aggregate demand in the economy. It gets its name because it varies with the business cycle, though it can also be persistent as it was during the great depression of the 1930's. Keynesian unemployment rises during economic downturns and falls when the economy improves. His type of unemployment exists due to inadequate effective demand.

In the Keynesian theory, employment depends upon effective demand which results in increased output, output creates income and income provides employment. He regards unemployment as a function of income. Effective demand is determined by aggregate supply and demand function. The aggregate supply function depends on physical

or technical conditions which do not change in the short run, thus it remains stable. Keynes concentrated on aggregate demand function, to fight depression and unemployment, thus employment depends on aggregate demand which in turn is determined by consumption demand and investment demand. Consumption depends on income, and when income rises savings also rises, and also consumption can be increased by raising the propensity to consume, which could lead to increase in income and employment, but it is believed that the psychology of people (taste, habits, etc) are constant in the short run, therefore propensity to consume is stable. Employment thus depends on investment.

2.2 THE RELATIONSHIP BETWEEN ECONOMIC GROWTH AND UNEMPLOYMENT

Linda Levine, in her contribution to economic growth and unemployment, vied that, in the short run, the relationship between economic growth and the unemployment rate may be a loose one. It is not usual for the unemployment rate to show sustained decline some

time after other broad measure of economic activity have turned positive. Hence it is commonly referred to as a lagging economic indicator. One reason that unemployment may not fall appreciably when economic growth picks up after a recession's end is that some firms may have underutilized employees on their payrolls because laying off workers when product demand declines and rehiring them when product demand improves has costs. As a result employers may initially be able to increase output to meet the rising productivity of their current employees. This temporarily boosts labour productivity growth above its long run rate. Once the labour on hand is fully utilized, output can grow no faster than the rate of productivity growth until firms begin adding workers. As an economic expansion progresses, output growth will be determined by the combined rates of growth, in the labour supply and labour productivity, as employment will rise. If employment rate is more rapid than labour force growth, the unemployment rate will fall. Over an extended period of time, there is a negative relationship between changes in the rate of real GDP growth

and unemployment. The long run relationship between the two economic variables was most famously pointed out in the early 1960s by economist Arthur Okun "Okun's Law" has been included in a lot of core ideas that are widely accepted in the economics profession. Okun's law which economists have expanded upon since it was first articulated states that real GDP about to equal to the rate of potential output growth usually is required to maintain a stable unemployment rate.

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. Potential output is an unobservable measure of the capacity of the economy to produce goods and services when available resources, such as labour and capital are fully utilized. The rate of growth of potential output is a function of the rate of growth in potential productivity and the labour supply when the economy is at

full employment. When the employment is high the actual GDP falls short of potential GDP, this is referred to as output gap.

In the absence of productivity growth, as long as new addition to the labour force is employed, growth in output will equal growth in labour supply. If the rate of GDP growth falls below the rate of labour force growth there will not be enough new jobs created to accommodate all new job seekers. As a result, the proportion of the labour force that is employed will fall. Put differently, the unemployment rate will rise. If the rate of output growth exceeds the rate of labour force growth, some of the new job created by employers to satisfy the rising demand for their goods and services will be filled by drawing from the pool of employed workers. In other words, the unemployment rate will fall. If GDP growth equals labour force growth in the presence of productivity growth, more people will be entering the labour force than are needed to produce a given amount of goods and services. The share of labour force that is employed will fall.

Expressed differently, the unemployment rate will rise. Only as long as GDP growth exceeds the combined growth rates of the labour force and productivity will the unemployment rate fall in the long run.

Knowing what the rate of GDP growth is or might be, is useful to policy makers interested in undertaking stimulus policies to bring down the unemployment rate. But just as stated, the rate of output growth necessary to lower the unemployment rate requires knowledge of the rates of labour force and productivity growth, (Linda Levine).

2.3 EMPIRICAL LITERATURE

Stephen (2011), investigates the impact of unemployment on economic growth for a case of Nigeria, for the period 1980-2008. He used Cobb-Douglas production function to develop his model and estimated his results by using simple OLS method; he found that unemployment changes significantly and inversely to the economic growth in Nigeria.

Silvapulle et al(2004), examined the relationship between unemployment and economic growth, they explore the impact of cyclical unemployment for a case of U.S, by Applying dynamic model for post war period data set, they found two conclusions from the study, first was that the positive impact of cyclical output on unemployment differs from negative impact cyclical output on unemployment in the short run, the second was that, the negative impact of cyclical output on cyclical unemployment is more significant than that of the positive impact of cyclical output on cyclical unemployment.

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 industrial sector use less labour to accomplish high volume of production, thereby leading to unemployment of workers. The researcher analyzed the causal link between

unemployment and productivity in different sectors of the Nigerian economy except service sectors.

Adebayo(2001), studied unemployment rate in Nigeria from 1986-1996, using secondary and observed that unemployment arises whenever the supply of labour exceeds the demand for it at the prevailing wage rate. Causes of unemployment to him can be analyzed from both the demand and supply side of the labour market in Nigeria. On the supply side there is the rapidly growing urban labour force arising from rural-urban migration, is usually explained in terms of push-pull factors. The push factors include the pressure resulting from man made ratio in rural areas and the existence of serious underemployment arising from seasonal cycle of climate. The factors are further strengthened in Nigeria by lack of infrastructural facilities which makes rural life unattractive. The pull factors to him, includes the rural-urban income differentiation in favour of urban dwellers and a

presumed high profitability of securing lucrative unemployment in the cities.

Levin and Wright (2000), found that it is important but difficult to distinguish between desirable effects of unemployment insurance that are observationally equivalent, when designing optimal unemployment insurance causes permanently higher involuntary unemployment by raising the reservation wage.

The paper avoids the problem by regarding the trade-off between the unemployment insurance replacement rate and unemployment as an intermediate relationship that matters only as far as its impacts on economic growth. Using annual panel data, they found that unemployment insurance replacement rate is associated with higher unemployment; however they found no significant relationship between unemployment insurance, related unemployment and the real growth rate of domestic product.

Ajecomobi and Ayenwale(2005), investigated the education expenditure trend, higher education student enrolment and linkage with unemployment and economic growth in Nigeria, using annual data from (1970-2005), which comes from several issues of central bank of Nigeria annual reports and statement of account, federal ministry of education and national university commission(NUC), the result shows that government funding is unstable and unpredictable capital and recurrent funding of the nation's budget, total enrollment and a level fund made available could adequately cater for the proportion of GDP that goes to education still low.

Charles Zimmerman and Sorokin(1980), made some combination of factors, thus the type of occupation which people engage in, the government phenomena comprising of the building and water supply size of the commodity density of population, in erogeneity of population, school differentiation and stratification, social mobility, and also found to be flexible about the sort of work they would accept. thus

a high proportion of the unemployed provided a relatively cheap and flexible pool of labour available to the employed when demand for employment picked up.

Ayodele(2000), found that Nigerian economic structure, especially the secondary sector, had low potentials for employment generation and is ill-equipped to absorb the economy's expanding labour force. Given the structure of the model, the study relied on the OLS techniques, using the time series data from 1985-1999. The result of the estimation generated, show that the growth in total employment of both the lower and upper grade of labour force was significantly lower than that of the GDP. The implication of the growth rates is that employment lagged behind economic growth in general, which to him could have risen from the limited employment created by the mining sector, whose major production technology remains a capital-intensive one with labour displacing effects. Also agriculture (another component of the primary sector with the greatest contribution to output) is

exceedingly peasantry, most of its ability to employ is in the disguised unemployment.

Therefore these evidence and writings showcase faintly the incidence of the impact of unemployment, its defective effect on economic growth. However the effect of unemployment in achieving high economic growth in Nigeria remains in exhaustively and non-critically examined.

CHAPTER THREE

3.0 METHODOLOGY

3.1 THE MODEL

The research work makes use of econometric method. Econometric methods are statistical methods specifically adapted to the peculiarities of economic phenomena, Koutsoyiannis (1997). It is adopted because of its ability to provide a precise prediction of economic magnitude. To achieve this, method of OLS estimation is employed for the econometric analysis. This is because the method of least square has some very attractive statistical properties that have made it one of the most powerful and popular method of regression analysis.

The OLS techniques, under certain assumptions have desirable statistical properties (efficiency, consistency, and unbiasedness). In other words, OLS estimates are the best linear unbiased estimate.

3.2 MODEL SPECIFICATION

An economic method is a representation of the basic features of economic phenomena. It is an abstraction of the real world,(Fonta, Ichoku and Anumunda, 2003). The specification of a model is based on the available information of an economic model which is dependent on the available information on the study as embedded, in standard error theory and other major empirical work or else the model will be non-theoretical.

Koutsoyannis (1997), opined that it always pays to incorporate only what is known from the subject matter into the model building process, based on this our model is specified as follows,

$$\text{GDP} = F(\text{UNEMP}, \text{EXP.EDU}, \text{RIR})$$

Where, GDP= Gross domestic product

UNEMP= Unemployment

EXP.EDU= Expenditure on education

RIR= Real interest rate

Mathematically the model is expressed as:

$$GDP = \beta_0 + \beta_1 \text{UMEMP} + \beta_2 \text{EXP.EDU} + \beta_3 \text{RIR} + \mu_1$$

Where,

β_0 = the intercept or the constant.

β_1 - β_3 = the coefficient of the explanatory variables.

μ_1 = Stochastic error term.

Gujarati (2003), defines μ_1 as a random variable that has well defined probabilistic properties. The stochastic error term represent other determinants of economic growth not explicitly taken into account by the above model.

3.3 ESTIMATION TECHNIQUES AND RESULT VALUATION

The estimation procedure here would be that of OLS. The emphasis would be to note whether the variable are well behaved or not. We aim

to ascertain their level of statistical significant or otherwise the result of the model will be evaluated on the basis of three (3) criteria namely: economic apriori expectation, statistical test of significance and economic test.

3.3.1 THE ECONOMIC CRITERIA

The economic apriori expectation will evaluate the parameter in terms of their meeting the standard economic theory expectations.

3.3.2 THE STATISTICAL CRITERIA

Statistical test are done to evaluate reliability of the estimated parameter in accordance with statistical theory and expectation. The statistical test carried out includes:

- A) The T-test, this is used to test the significance of the individual parameters of the regression model. The decision to accept null hypothesis is based on the value of the test statistics from the data at hand.
- B) The F-test, this would be carried out to ascertain whether,

- i. An individual regression co-efficient is statistically significant.
- ii. All partial slope co-efficient are zero.
- iii. Two or more co-efficient are statistically equal.
- iv. There is structural stability of the regression model.
- v. Co-efficient satisfies some linear restrictions.

C) Co-efficient of determination (R^2): The goodness of fit test is done using the square of the correlation co-efficient. It shows or explains the percentage in total variation of the endogenous variable being explained by the change in the explanatory variables. It measures the extent to which the explanatory variables are responsive for judging the explanatory power of the regression.

3.3.3 ECONOMETRIC TESTS

The test will be performed on the regression result in order to evaluate it according to the classical assumptions of OLS.

These tests are discussed briefly below:

- a) Test for multi-colinearity: This will be used to test the linear colinearity among the explanatory variables and correction matrix would be employed in this test.
- b) Auto-correlation test: This is used to test if the errors corresponding to different observation are uncorrelated, testing for the randomness of error term. The Durbin-Watson (DW) method would be employed for this test, since according to Koutsoyannis (1997) D.W, provides estimates which have properties and are more efficient for all sample of all sizes.
- c) Heteroscedasticity test: This is used to know whether error term of the explanatory variables of the estimated model have equal variance.
- d) Normality test: This will be used to know whether the error term of the estimated model is normally distributed.

3.4 NATURE AND SOURCES OF DATA

Data used in this research are secondary data, sourced from the reports and bulletin of the following:

- i. Central bank of Nigeria (CBN).
- ii. Bureau of statistics.

CHAPTER FOUR

4.0 DATA PRESENTATION AND INTERPRETATION OF RESULT

4.1 PRESENTATION OF RESULT

The result of the model which was specified in the previous chapter is presented as below:

Table 1:

Method: ordinary least square

Period of study: 1980-2010

Included observations: 31

LGDP	Coef.	Std. err	t	P> t	95% Confi.Int.	
UNEMP	.0056286	.0745885	0.08	0.940	-.1474143	.1586715
GOVEXPEDU	.0000356	7.43e-06	4.80	0.000	0.0000204	.0000504
RIR	-.0064583	.0158244	-0.41	0.686	-.0389274	.0260107
_CONS	12.41805	.5273664	23.55	0.000	11.33598	13.50012

It has the following results

$$F(3, 27) = 22.51$$

$$\text{Prob} > F = 0.0000$$

R-squared = 0.7143

Adj R-squared = 0.6826

Root MSE = 1.2784

4.2 INTERPRETATION OF RESULT

4.2.1 ANALYSIS OF REGRESSION COEFFICIENT:

The result showed that the intercept is 12.41805. This shows that if all the explanatory variables are held constant, GDP will be 12.41805. The coefficient of unemployment (UNEMP) is a positive value of 0.0056286. This result implies that a unit increase in UNEMP will increase GDP by 0.0056286. The second variable representing Government expenditure (GOVEXPEDU) has a positive value of with 0.0000356. This implies that a unit increase in GOVEXPEDU will cause a 0.0000356 change in GDP. Lastly, the real exchange rate (RIR) has a negative value of -0.0064583. This implies that a unit increase in RIR will bring about a 0.0064583 decrease in the GDP.

4.2.2 Evaluation Based on Economic Apriori Expectations

The test is carried out to test if the signs and magnitudes of the results are in conformity with what economic theories postulates. Economic theory suggests that in applied econometric research, not all the explanatory variables affecting the dependent variable are included in the model and for that reason, it is natural to expect that omitted variables are frequent causes of independence in the model, Kuotsoyannis (1977). The table below is a summary of the outcome of the parameter estimates.

Variable	Expected sign	Observed sign	Remark
UNEMP	-	+	Does not conform
GOVEXPEDU	+	+	Conforms
RIR	-	-	Conforms

From the result above, all variables except UNEMP conformed to the a priori expected sign.

4.2.3 EVALUATION BASED ON STATISTICAL CRITERIA

1. COEFFICIENT OF DETERMINATION (R-SQUARE)

The R-square measures the proportion of the total variations in the dependent variable that is explained by the independent variables. From the result, R-squared is 0.7143. This shows that the explanatory variables explain the variation in the dependent variable to the tune of 71.43%.

2. THE T-TEST

The t-test is undertaken to ascertain the individual significant impact of the independent variables on the dependent variable.

Hypothesis:

H_0 : The individual parameters are not significant.

H_1 : The individual parameters are significant.

Decision rule:

If the t -calculated $>$ t -tabulated, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1), and accept if otherwise.

Level of significance = α at 5% = $0.05 / 2$

Degree of freedom = $n - k = 31 - 4 = 27$

Where n : sample size

k : Number of parameters.

The t -test is summarized in the table below:

Variables	t-cal	t-tab	Remark
UNEMP	0.08	± 2.0518	Insignificant
GOVEXPEDU	4.80	± 2.0518	Significant
RIR	-0.41	± 2.0518	Insignificant
Constant	23.55	± 2.0518	significant

From the results above, the t-test revealed that only government expenditure and the constant have significant impacts on the GDP, while unemployment and government expenditure have insignificant impacts.

Conclusion: The result revealed that unemployment has a positive relationship and an insignificant impact on the GDP.

3. THE F- STATISTICS TEST

The F-statistics test is used to test the overall significance of the model. It follows F-distribution with k-1 degrees of freedom in the numerator and n-k degrees of freedom in the denominator.

TEST HYPOTHESIS:

$$H_0: \beta_1 = \beta_2 = \beta_3 = 0$$

$$H_1: \beta_1 = \beta_2 = \beta_3 \neq 0$$

The decision rule is to reject H_0 if $F_{cal} > F_{tab}$. At 0.05 significance level, the tabulated $F = [F(3, 27)]$ is 2.96. Since the calculated F is 22.51, we reject H_0 and conclude that the model is significant.

4.2.4 EVALUATION BASED ON ECONOMETRIC CRITERIA

1. AUTO CORRELATION (THE DURBIN - WATSON CRITERION).

This test is carried out to check if the successive values of the random variable (U_i) are independent.

Test Hypothesis:

$H_0: \rho = 0$ (the U 's are not auto correlated)

$H_1: \rho \neq 0$ (the U 's are correlated).

The decision rule is summarized here under as

Null Hypothesis (H_0)	Decision	If
No positive auto correlation	Reject	$0 < d < d_L$
No positive auto correlation	No decision	$d_L < d < d_U$
No negative auto correlation	Reject	$4 - d_L < d \leq 4$
No negative auto correlation	No decision	$4 - d_U < d \leq 4 - d_L$
No auto correlation, positive or negative	Do not reject	$d_U < d < 4 - d_U$

Where:

d_L = Lower limit

d_U = Upper limit

d = Durbin Watson (calculated)

At 0.05 Significance level

$$d_L = 1.29685 \quad d_U = 1.57011 \quad d(4, 31) = 0.1772905$$

Since d (calculated Durbin Watson) is 0.1772905, d falls within the range

$$0 < d < d_L \text{ i.e. } 0 < 0.1772905 < 1.29685.$$

We therefore reject H_0 and conclude that there is positive serial correlation in the residuals.

2. Heteroscedasticity test:

This test is carried out using White's general heteroscedasticity test (with cross terms). The test asymptotically follows a chi-square distribution with degree of freedom equal to the number of regressors (excluding the constant term).

The test hypothesis is stated thus;

H_0 : Error terms are (homoscedastic)

H_1 : Error terms are (heteroscedastic)

Note: The sample size (n) multiplies the R^2 obtained from the auxiliary regression asymptotically follows the chi-square distribution with degree of freedom equal to the number of regressors (excluding constant term) in the auxiliary regression.

Decision Rule:

Reject the null hypothesis if $X^2_{cal} > X^2$ at 5% level of significance. If otherwise, accept the null hypothesis. From the obtained results,

$$X^2_{cal} = 8.83 > X^2_{0.05(9)} = 0.45$$

We therefore reject the null hypothesis and accept the alternative hypothesis showing that the error term do not have a constant variance.

3. Test for Multicollinearity:

The term Multicollinearity is due to Ragnar Frisch. Originally it meant the existence of a “perfect” or exact, linear relationship among some or all explanatory variables of a regression model. The tests were carried out using the correlation matrix. According to Barry and Feldman (1985) criteria; “Multicollinearity is not a problem if no correlation exceeds 0.80”.

	UNEMP	GOVEXPEDU	RIR
UNEMP	1.000000		
GOVEXPEDU	0.8149	1.000000	
RIR	0.4981	0.3952	1.000000

From the above table, we can see that the pair-wise UNEMP and GOVEXPEDU have values in excess of 0.8; therefore we conclude that multicollinearity exists between the pair-wise.

4. Normality Test.

We adopted the Jacque – Bera test of normality

Hypothesis: Test.

H_0 : 0 (the error term follows a normal distribution.

Against:

H_1 : (the error term does not follow a normal distribution

At $\sigma = 5\%$ with 2 degrees of freedom.

Test Statistics:

The decision rule is reject H_0 if $X^2_{cal} > X^2_{tab}$, and accept if otherwise.

$$X^2_{cal} = 7.66$$

$$X^2_{tab} = 5.991$$

Since $X^2_{cal} > X^2_{tab}$ i.e. $7.66 > 5.991$, we reject H_0 and accept that the residuals are not normally distributed.

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSION AND POLICY RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

This study is an attempt to evaluate the effect of unemployment on economic growth and the model was estimated with the use of ordinary least square method. The inclusion of relevant explanatory variable like government expenditure on education etc, in the model has really justified their role in adjusting the relationship between unemployment and growth of the economy.

In the study it was discovered that

- Unemployment has a positive and insignificant impact on the GDP.
- The test also shows that government expenditure on education has a positive relationship on GDP, a unit increase in government expenditure on education would increase the GDP by 0.0000356.

- The real interest rate has a negative but insignificant relationship with GDP.

This implies that, if the Nigerian economy desire to attain economic growth, the government should continually invest more funds in the education sector, because this will help in the increase of the GDP.

And also real interest rate when high lowers the rate of investment, which also contributes to the emergence of unemployment, thereby reducing the rate of GDP.

Unemployment is insignificant, it is considered as one of the factors, which hinders economic growth.

5.2 CONCLUSION

Having examined the relationship between unemployment and GDP, we can say that unemployment is a negative phenomena, this has done more harm than good to the society in the sense that, it has led the youth who are unemployed to engage in certain dangerous and evil acts like arm robbery, etc.

There is need to eliminate or reduce the rate of unemployment in our society. These could be done in several ways, take for example government should reduce the rate of the real interest rate, in order to encourage investors to borrow, to be able to establish businesses that would bring about employment of youths, etc. The below policy recommendation will go a long way to assist the government and policy makers, to create policies that will help in reducing unemployment.

5.3 POLICY RECOMMENDATIONS

Based on the finding of this research, I therefore make some policy recommendations, as follows:

- 1) Government should formulate policies that will help in proper check of annual unemployment rate, and its outcome on the effort to reduce it, in order to know how to battle it, the coming year.

- 2) Policies should be formulated to reduce and stable the real interest rate, in order to encourage investors to borrow funds to create establishments.
- 3) Change in the educational system so that school leavers and graduates alike would be job creators rather than job seekers.
- 4) Formulation of effective unemployment policies that would absorb the unemployed citizens especially into informally sectors of the economy.

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chi2(9)      =      8.83
Prob > chi2  =      0.4528

```

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	8.83	9	0.4528
Skewness	1.73	3	0.6313
Kurtosis	5.14	1	0.0234
Total	15.70	13	0.2658

```
. predict error, res
```

```
. sktest error
```

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
error	31	0.9754	0.0030	7.66	0.0217

```
. corr unemp govexpedu rir
(obs=31)
```

	unemp	govexp~u	rir
unemp	1.0000		
govexpedu	0.8149	1.0000	
rir	0.4981	0.3952	1.0000

year	gdp	unemp	govexpedu	rir
1980	49632.32	6.4	161.58	-2.4
1981	47619.66	5.2	165.43	-13.15
1982	49069.28	4.3	187.93	2.55
1983	53107.38	6.4	162.15	-13.2
1984	59622.53	6.2	198.9	-27.1
1985	67908.55	6.1	258.6	3.75
1986	69146.99	5.3	262.71	5.1
1987	105222.8	7	255.01	7.3
1988	139085.3	5.1	1458.8	-21.8
1989	216797.5	4.5	3011.8	-14.1
1990	267550	3.5	2402.8	18
1991	312139.7	3.1	1256.3	7.01
1992	532613.8	3.5	291.3	-14.7
1993	683869.8	3.4	8882.38	-38.88
1994	899863.2	3.2	7382.38	-36
1995	1933212	1.9	9746.4	-52.62

1996	2702719	2.8	11496.15	-9.56
1997	2801973	3.4	14853.54	5.04
1998	2708431	3.5	13589.49	8.29
1999	3194015	17.5	43690.65	14.72
2000	4582127	18.1	57956.64	11.08
2001	4725086	13.7	39882.6	-0.61
2002	6912381	12.2	80530.88	11.95
2003	8487032	14.8	64782.15	6.71
2004	1.14E+07	11.8	76524.65	4.18
2005	1.46E+07	11.9	82785.06	0.05
2006	1.86E+07	12.3	119000	9.06
2007	2.07E+07	12.7	150800	11.54
2008	2.43E+07	14.9	164000	3.54
2009	2.48E+07	19.7	137116	5.96
2010	3.40E+07	21.1	158640	3.79

