Educational Investment and Unemployment in Nigeria

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ABSTRACT: *Education is a fundamental human right and is essential for the development and progress of any nation. It is a general belief that educated individuals fare better in the labour market than the less educated. This study empirically examines investment and expenditures in education, and its influence on unemployment rate in Nigeria from 1991 to 2021. Unit root test, ARDL approach, bound test, Breusch Godfrey serial correlation LM test and the CUSUM test were employed. Unemployment rate (UER) was used as the dependent variable while Federal government recurrent expenditure (GEE), credit to private sector (CPS), average of school enrollment rate (ASE) as proxy for literacy rate, labour force participation rate (LFP) and gross fixed capital formation (GFCF) as the independent variables. Findings revealed that apart from UEM that is stationary at the level, the other variables are stationary at first difference given the 5% level of significance. Labour force participation rate is statistically significant. There is an insignificant positive relationship between government recurrent expenditure on education and unemployment rate in the long -run. On the other hand, credit to private sector, school enrolment rate, and gross fixed capital formation all conform to their a priori expectations, but are insignificant, i.e., statistically indifferent from zero. The study recommended among others that an actionable and working fiscal policy in the educational sector should be established and government should improve on the quality of institutions through better teacher training, investment in educational research development, and the establishment of vocational training centers that provide practical skills to students.*

KEYWORDS*:* educational investment; unemployment; government recurrent expenditure; credit to private sector; labour force participation rate

INTRODUCTION

Education is a fundamental human right and is essential for the development and progress of any nation. It is an engine of growth and key to development in every society, based on its quality and quantity. In order to make a significant contribution to economic growth and development, high

quality education is required. The twenty-first century paradigm is shifting towards the enhancement of knowledge as a priority. This has likely been a product of the resonation of states connecting their higher educational systems much more closely to their various economic development strategies. Educational investment or expenditure on the other hand, refers to the resources allocated to education by individuals, households, governments, and other stakeholders. Educational investment can include spending on tuition fees, textbooks, uniforms, and other direct costs, while educational expenditure encompasses broader investments in education, such as teacher salaries, school infrastructure, and education policies.

Education is an economic good because it is not easily obtainable and thus needs to be apportioned. Economists regard education as both a consumer and capital good, because it offers utility (satisfaction) to a consumer and serves as an input to develop the human resources necessary for economic and social transformation. The focus on education as a capital good related to the concept of human capital emphasizes the development of skills as an important factor in production activities. It is widely accepted that education creates, improve citizens and helps to upgrade the general standard of living in a society. The increased faith in education as an agent of change in many developing countries, has led to heavy investments in it. There is belief that expanding educational opportunities and access promotes economic growth. Education is a purposeful activity targeted at achieving set goals. This involves transmission of knowledge, fostering skills and character traits (Wikipedia, 2023). It is the process of training and developing the knowledge, skill, mind and character required in decision-making, interaction and creativity. Education is the key that unlocks the potentials of an individual, opens up the thinking faculties, transforms the individual and, by extension, the society (Odukoya et al 2018; Faiz, 2019). Education creates an avenue for every child to reach its potential to lead a productive, healthy life and to acquire a decent job (OECD, 2012B). It is a general belief that educated individuals fare better in the labour market than the less educated.

According to Kenny (2019), economists for a long time have paid ample attention to the concepts of investments in physical capital but have switched emphasis to the concept of human capital investments in recent times. Human capital are those attributes such as stock of competencies, knowledge, habits, social and personality attributes embodied to perform labour in order to create economic value (Kenny, 2019). In general, human capital represents the investment people make in themselves that enhance their economic productivity. Many theories categorically link investment in human capital development to education, and the role of human capital in economic development, productivity and innovation.

In Nigeria, education is considered a top priority by the government, and significant investments have been made to improve the quality of education and increase access to educational opportunities for all citizens. However, despite these efforts, Nigeria's education system still faces several challenges, including inadequate funding and infrastructure, high levels of illiteracy, and a

shortage of qualified teachers. The Nigerian government has been increasing its budgetary allocation to education over the years, but the percentage of the budget allocated to education remains low compared to other countries. According to UNESCO (2021), Nigeria's budget allocation to education is below the recommended 26% of the total budget, with only 7.02% of the national budget allocated to education in 2021. Despite the low budget allocation, the government has made some efforts to improve education in the country. In 2020, President Muhammadu Buhari signed the Universal Basic Education (UBE) Act (Amendment) Bill into law, which increased the basic education allocation from 2% to 3.5% of the Consolidated Revenue Fund (CRF) (Vanguard 2020).

In view of the expected benefits from education, there is the controversy in literature on the relevance of more formal education systems given the challenge of unemployment, which remains a cancerous phenomenon in the process of development in Nigeria. Hence, questioning the efforts of government and private individuals (Adejumo and Adejimo 2017). Explicitly, challenges such as graduate unemployment, employment mismatch, low productivity and underemployment has indeed challenged the continuous quest for more educational pursuit in Nigeria (Adejumo et al 2021).

The Nigerian Economic Summit Group (NESG) has projected that the county's unemployment rate will hit 37 percent in 2023. The nation's population growth estimated at 3.2 per cent will lead to a decline in real per capita income, due to weak performance in the job-elastic sectors, and low labour absorption of sectors needed to drive economic growth (NESG macroeconomic outlook report, 2023). More so, the country's GDP growth will be subdued in 2023 due to strains on investment and low productivity in critical sectors. The services sector will drive economic growth, but this growth will not be strong enough to generate significant jobs. As a result, unemployment will remain unabated while election-related spending and improvement in the oil sector will support economic growth (NESG, 2023). With respect to this study, we looked at investment from the perspective of government expenditure. Investment in education is crucial for the development of any country. A well-educated population is a critical factor in the growth and development of the economy, as it leads to increased productivity and innovation.

LITERATURE REVIEW

Chandra & Sharma (2015) in their analysis, made an empirical study of education and unemployment in the Indian states for the period 1991-2011. They applied panel cointegration and causality analysis to investigate the long-run and short-run relationship between education and unemployment. The result of their panel data analysis shows that there is a negative long-run relationship between education and unemployment, indicating that an increase in education levels leads to a decrease in the unemployment rate. However, in the short run, there is a unidirectional causality running from unemployment to education.

In the same vein, Hasanov (2019) in his time series analysis, made an investigation of the impact of government education expenditure on unemployment in Azerbaijan from 1995 to 2017. The ARDL bounds testing approach is employed to test the long-run and short-run relationships between the variables. The empirical findings reveal that government education expenditure is a significant predictor of unemployment in the long run in Azerbaijan. This relationship however is a negative one. On the other hand, no significant impact is observed in the short run. This implies that the government's investment in education can reduce unemployment in the long run.

Mahdi & Shahid (2017) conducted an empirical analysis to investigate the relationship between education expenditure and unemployment in Pakistan using time series data from 1980 to 2016. Their analysis employs the Auto Regressive Distributed Lag (ARDL) model to estimate the long-run and short-run relationships between education expenditure and unemployment. Their result postulates that education expenditure has a negative and significant impact on unemployment rate in the long run. This supports the claim that increased investment in the educational sector can catalyze the reduction of unemployment in Pakistan. Nevertheless, this expenditure was found not to be statistically different from zero when tested for the short run dynamics.

Still on the Middle East, Naseri & Shahrestani (2019) investigates the impact of education expenditure on the unemployment rate in Iran. They estimated for the short run and long run effects using the autoregressive distributed lag (ARDL), bounds testing approach to cointegration and the error correction model (ECM). They employed a quarterly time series data for a period of 1991Q1 to 2016 Q4, which covers a period of 26 years. Like previous results, their findings reveal a negative and statistically significant effect of total expenditure on the rate of unemployment both in the short run and long run in Iran.

Emerson (2011) used monthly historical data from January 1948 through February 2010 obtained from the United States Bureau of Labor Statistics to investigate the relationship between unemployment and labor force participation. Their Vector Error Correction (VEC) model to cointegration analysis supports a long-run relationship between these two variables.

Similarly, Österholm (2010) investigates the relationship between Swedish unemployment and labour-force participation using monthly historical data from January 1970 to April 2007. Their cointegration analysis shows that there is a robust long-run relationship between unemployment and labour-force participation rate.

Kakinaka & Miyamoto (2012) studied the relationship between the labour-force participation rate and the unemployment rate in Japan over the sample period of January 1980 to December 2010. They employed cointegration analysis and their results establish that there exists a long-run equilibrium relationship between labour-force participation rate and the unemployment rate in Japan. This, however, was valid only for male workers but not for female workers.

Bampasidis & Sekeris (2020) conducted an analysis on the impact of education spending on unemployment in Greece. Using a panel data set covering the period from 2000 to 2017, they estimated the effect of education spending on the unemployment rate. They also made an enquiry into the role of education quality in mediating the relationship between education spending and unemployment. The result of their analysis reveals that there exist a significant negative relationship between education spending and the unemployment rate in Greece, suggesting that increasing education spending can help to reduce unemployment. The paper also finds that education quality plays a significant mediating role in this relationship, suggesting that improving education quality can enhance the impact of education spending on reducing unemployment.

Looking at some of the empirical works done in our country, Ademola & Omokeji (2018) examined the nexus between education and unemployment in Nigeria using time series data from 1981 to 2014. The study utilized the Johansen cointegration technique and the vector error correction model to analyze the data. The results showed that there exists a long-run significant relationship between education and unemployment in Nigeria. They also carried out a causality test to ascertain the direction of causality between the two variables. Their results revealed a unidirectional causality running from education to unemployment.

Similarly, Ajenifuja (2019) made an empirical enquiry into the nature of the relationship between education expenditure and unemployment rate in Nigeria. The study adopted annual time series data from 1981 to 2016. They utilized the autoregressive distributed lag (ARDL) approach to co-integration to examine the long-run relationship among the variables. Their results reveal that there is a long-run relationship between education expenditure and unemployment rate in Nigeria. Specifically, education expenditure has a significant negative effect on the unemployment rate in Nigeria, which highlights the critical role education expenditure plays in reducing unemployment in Nigeria.

In addition, Ndubisi (2014) also examined the relationship between education and unemployment in Nigeria, concerning Abia State, with the aim of investigating the impact of education and identifying factors that contribute to unemployment in the state. Using a structured questionnaire, he collected data from a sample of 200 unemployed graduates. He employed both descriptive and inferential statistical techniques to analyze the data, and his findings reveal that higher levels of education leads to lower levels of unemployment. He also identified that weak infrastructure, bribery and corruption, and inadequate funding of education as challenges bedeviling the state of employment in Abia State.

Adeyemo et al. (2020) investigated the relationship between education expenditure and unemployment in Nigeria using an Autoregressive Distributed Lag (ARDL) bounds testing approach from 1981 to 2018. They found a negative relationship between education expenditure

and unemployment in the long run, indicating that increasing education expenditure can help to reduce unemployment over time.

Numerous research studies have been conducted on how investing in education affects the unemployment rate in Nigeria. However, conflicting results have been found in both foreign and domestic studies. Therefore, there is a need to re-examine and confirm previous studies to determine the actual impact of educational investment on unemployment specifically to Nigeria. The lack of agreement among these studies creates an opportunity for a more comprehensive and advanced investigation into this issue. This study aims to provide further understanding of the topic.

A significant research gap encountered is that quite a few of the literatures reviewed on this topic were with empirical content. A good number of the local literatures were done from a theoretical stand point of the challenges of investments in education, and the direct and indirect causes of unemployment in Nigeria. This study will therefore seek to empirically determine the impact of educational investment on unemployment rate in Nigeria using a detailed econometric analysis in supporting other research works done already and add to the wealth of knowledge in the educational sector.

The study spans from a period of 1991-2021 and serves as an improvement on what has been done in this area of economic research. These issues informed the choice of methodology and serve as a reference and point of departure for further studies. This existing gap formed the rationale behind this study.

UNEMPLOYMENT IN NIGERIA

Unemployment is a major socio-economic problem that affects many countries around the world, including Nigeria. Nigeria is one of the most populous countries in Africa, with an estimated population of over 211 million people. Despite being one of the largest economies in Africa, Nigeria has struggled with high rates of unemployment over the years, which has had a negative impact on the country's economic growth and development. The National Bureau of Statistics (NBS) in Nigeria reported that the unemployment rate in Nigeria stood at 33.3% as of Q4 2020. This means that about 23.2 million Nigerians are unemployed, which is a significant increase from the 27.1% recorded in Q2 2020. The situation is further compounded by the fact that Nigeria has a large youth population, with over 60% of the population under the age of 25. The youth unemployment rate in Nigeria is even higher, with over 42.5% of young people aged 15-34 unemployed as of Q4 2020.

Figure 1.2: Unemployment Rate in Nigeria
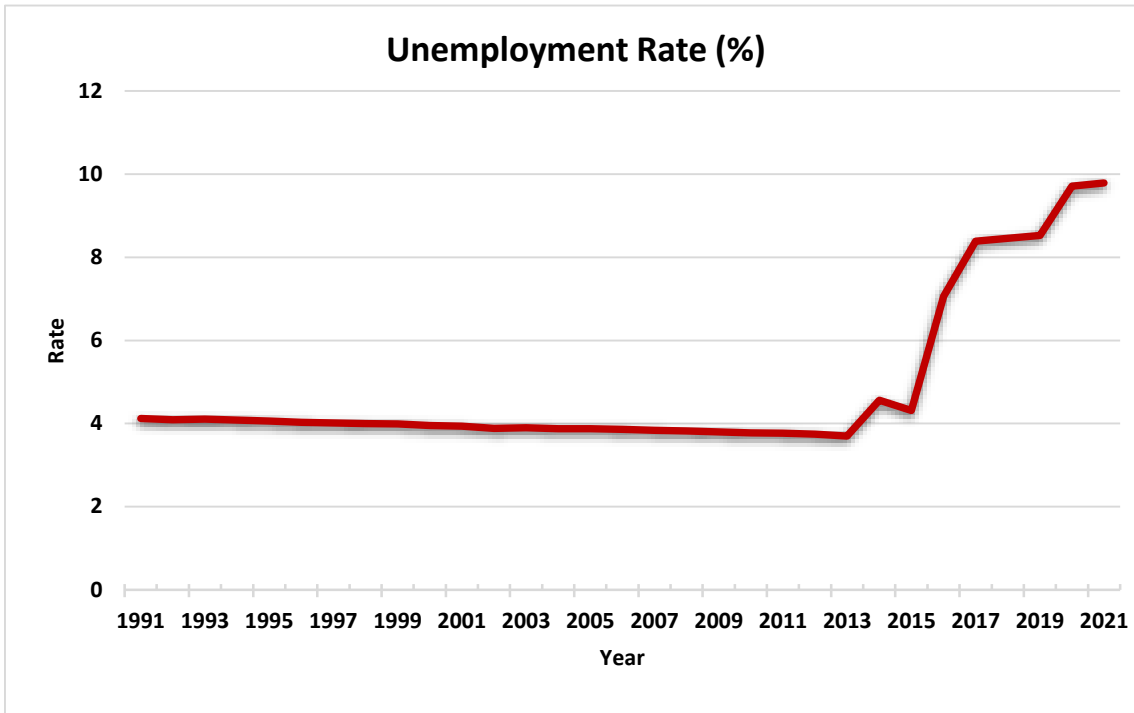
Unemployment Rate (%)

Source: Authors' computation, ILO modeled estimate 2021

Several factors contribute to the high rate of unemployment in Nigeria. One major factor is the slow pace of economic growth and development in the country, which has resulted in limited job creation. Despite being an oil-producing country, Nigeria has not fully harnessed the potential of its natural resources to create employment opportunities for its citizens. In addition, there is a significant mismatch between the skills possessed by job seekers and the skills required by employers. This means that even when jobs are available, many people do not have the necessary skills to fill those positions (Kazeem 2020). Another factor contributing to the high rate of unemployment in Nigeria is the high level of corruption in the country. Corruption has led to a situation where jobs are often given to people based on connections rather than merit. This means that qualified candidates are often overlooked in favor of less qualified individuals who have connections to people in power. This, in turn, creates a situation where many people who are qualified for jobs remain unemployed (Ndubisi, 2014).

The Nigerian government has taken several steps to address the issue of unemployment in the country. For instance, the government has implemented various job creation programs, such as the N-Power program, which aims to provide job opportunities for young graduates and non-graduates. The government has also introduced policies aimed at promoting entrepreneurship and small business development, such as the Youth Entrepreneurship Support (YES) program,

National Social Investment Program (NSIP), Conditional Cash Transfer (CCT), Government Enterprise and Empowerment Program (GEEP), and even the National Youth Service Corps (NYSC) (FMHDS, 2020). These programs aim to provide youth with skills training, entrepreneurship opportunities, and financial support to improve their employability and create job opportunities. However, the impact of these programs on reducing the rate of unemployment in the country has been limited due to various challenges, such as insufficient funding, inadequate monitoring and evaluation, and weak implementation capacity (Nwosu & Emenyonu, 2020).

Several studies have examined the relationship between unemployment and educational investment or expenditure, with mixed results. Some studies suggest that increasing educational investment can help to reduce unemployment rates by improving the skills and employability of individuals (Chen et al., 2019). Other studies argue that the relationship is complex, and that other factors, such as economic growth, labor market policies, and technological change, also influence unemployment rates (Bassanini & Duval, 2009). However, other studies suggest that the relationship between educational investment and unemployment may be more indirect, as education can also have broader social and economic benefits that can contribute to reducing unemployment rates in the long run. For example, investing in education can lead to increased innovation, productivity, and competitiveness, which can create more job opportunities and stimulate economic growth (Hanushek & Woessmann, 2012).

THEORETICAL FRAMEWORK

Human Capital Theory

Gray Becker and Theodore Schultz, American economists were the pioneers for the human capital theory in 1960. Education and training were identified as investments that could increase productivity. Education is seen as an important component of workforce. Intellectual and human capital are treated as renewable sources of productivity, organizations try to cultivate these sources, hoping for added innovation or creativity. Sometimes, a business problem requires more than just new machines or more money. This theory emphasizes the need for policy makers to allocate significant resources to the expansion of educational systems. While some governments may be reluctant to invest in education, the positive returns from this investment will significantly outweigh the costs. Many of the developing nations have thus realized that the principal mechanism for developing human knowledge is the education system. Thus, they invest huge sums of money on education, not only as an attempt to impact knowledge and skills to individuals, but also to impact values, ideas, attributes and aspirations which may be in the nation's best developmental interest.

Risk Taking Theory (RTT)

The risk-taking theory of Richard Cantillon and John Stuart Mill supports entrepreneurship education. According to the theory, entrepreneurship is perceived as a mental education that

stimulates individuals to take calculated risk for which future stream of benefits are guaranteed, and people taking big risk have to contend with a great responsibility (Alam and Hossan, 2003). The summary of the theory is that entrepreneurship education improves the ability, capability and potentials of individuals to undertake risks for which economic benefits are assured.

Schumpeter Effect (TSE)
According to the Schumpeter effect, entrepreneurship, also known as new-firm start-ups, is inversely related to the phenomenon of unemployment (Garofoli, 1994; Audretsch and Fritsch, 1994). In other words, the power of creative destruction encourages employability when new businesses are established in the economy. According to Lucas (1978) and Jovanovic (1982), a high level of unemployment is frequently correlated with a low level of entrepreneurial activity. In other words, if people lack the motivation to start their own businesses, the unemployment rate will be quite high. The Schumpeter effect suggests that unemployment rates are typically quite high because fewer people have the entrepreneurial skills and human capital needed to launch and maintain new businesses

The Refugee Effect (TRE)
The mechanism by which entrepreneurship activity is accelerated by unemployment is explained by the refugee effect. The theory behind it dates back to Oxenfeldt (1943), who posited that when people experience the shock of unemployment and the ensuing pessimism, they frequently turn to self-employment as a workable substitute for maintaining body and soul. In the same vein, Knight suggests that people choose between three opposing circumstances, namely employment, self-employment, and unemployment. The refugee effect postulates that as unemployment rises, start-up activity will eventually rise as well since the opportunity cost of delaying a business venture has diminished (Evans and Leighton, 1990; and Blanch flower and Meyer, 1986).

METHODOLOGY

This research investigates the relationship between educational investment and unemployment in Nigeria over the period from 1991 to 2021. Annual data from the Central Bank of Nigeria Statistical Bulletin 2021 and the World Development Indicators 2021 are used to study this relationship. Non-stationary data is used to obtain reliable results. The Augmented Dickey Fuller test is used to assess stationarity, and the ARDL approach is used because it is suitable for single or mixed orders of integration and small sample sizes. The Bound test is used to determine the connection between long-term and short-term outcomes. Furthermore, the Breusch Godfrey serial correlation LM test and the CUSUM test are employed to verify the stability and serial correlation of the model.

Model Specification and Description of the Variable

The functional and mathematical form of our model is specified thus:

$$UER = f(GEE, CPS, ASE, LFP, GFCF) \tag{1}$$

$$UER = \beta_0 + \beta_1 GEE + \beta_2 CPS + \beta_3 ASE + \beta_4 LFP + \beta_5 GFCF + \cup \tag{2}$$

Where: UER is unemployment rate expressed as a percentage of total labour force; GEE is federal government recurrent expenditure on education measured in billions of naira; CPS is credit to private sector by banks used as proxy for access to finance measured in billions of naira; ASE is the composite average of school enrollment rate used as proxy for literacy rate; LFP is labour force participation rate expressed as a percentage of total population rate; GFCF is gross fixed capital formation. These variables are all expressed in their natural logarithm form with exception of labour force participation rate. β_0 is the intercept, and β_1 to β_{11} are the slope coefficients.

The autoregressive-distributed lag (ARDL) technique to cointegration is used to capture the interactions of these variables and specified as follows:

$$\Delta lnUER_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i} \Delta lnUER_{t-1} + \sum_{i=0}^{n} \beta_{2i} \Delta lnGEE_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta lnCPS_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta lnASE_{t-i} + \sum_{i=0}^{n} \beta_{5i} \Delta lnLFP_{t-i}$$
$$+ \sum_{i=0}^{n} \beta_{6i} \Delta lnGFCF_{t-i} + \beta_7 lnUER_{t-1} + \beta_8 lnGEE_{t-1} + \beta_9 lnCPS_{t-1} + \beta_{10} lnASE_{t-1} + \beta_{11} lnLFP_{t-1}$$
$$+ \beta_{11} lnGFCF_{t-1} + \varepsilon_t \tag{3}$$

The error correction model for the estimation of the short-run relationships is specified as:

$$\Delta lnUER_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i} \Delta lnUER_{t-1} + \sum_{i=0}^{n} \beta_{2i} \Delta lnGEE_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta lnCPS_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta lnASE_{t-i} + \sum_{i=0}^{n} \beta_{5i} \Delta lnLFP_{t-i}$$
$$+ \sum_{i=0}^{n} \beta_{6i} \Delta lnGFCF_{t-i} + \lambda ECM_{t-1} + \varepsilon_t \tag{4}$$

where (λ) the coefficient of the error correction term ECM_{t-1} is expected to be negative and significant to show that short-run disequilibrium will converge back to the established long-run relationship.

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EMPIRICAL RESULTS

Table 4.1: Unit Root Test

Variables	ADF Stat. at Levels	5% Critical Value	ADF Stat at First Difference	5% Critical Value	Order of Integration
lnUER	4.016466	-3.612199			I (0)
lnGEE	-3.354655	-3.568379	-7.368930	-3.580623	I (1)
lnCPS	-1.081678	-3.568379	-4.596020	-3.574244	I (1)
lnASE	-2.933483	-3.574244	-4.178859	-3.603202	I (1)
LFP	-1.968249	-3.574244	-3.665725	-3.574244	I (1)
lnGFCF	-2.574418	-3.580623	-10.10890	-3.580623	I (1)

Source: Authors' computation, EViews 10

The test results show that apart from UEM that is stationary at the level, the other variables are only stationary at first difference given the 5% level of significance. With the test results showing that the variables are integrated of a mixed order of I(0) and I(1), ARDL remains a reliable econometric technique for this empirical analysis. Having ensured that the variables are in appropriate order of integration we proceed to check for long run or short run equilibrium relationship among the variables using the bound test.

Cointegration
Table 4.2: ARDL bound test result for cointegration.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	10.05905	10%	2.08	3
k	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Source: Author's computation, EViews 10

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Above, Table 4.2 displays the outcomes of the ARDL bound tests, which demonstrate the long-term connection between the variables. The outcome reveals that the F-statistic value of 10.05905 exceeds the upper bound values for 1%, 2.5%, 5%, and 10%, respectively. Consequently, we do not fail to reject the null hypothesis and deduce that there is a stable, long-term connection among the estimated variables.

Long-Run and Short-Run Model Estimation
Since we have confirmed the presence of a co-integrating relationship among the variables, we move on to estimate both the long-term and short-term models using the autoregressive distributive lag (ARDL) model. The resulting model can be expressed as:

$$\ln UER_t = \beta_0 + \beta_1 \ln UER_{t-1} + \beta_2 \ln GEE_{t-1} + \beta_3 \ln CPS_{t-1} + \beta_4 \ln ASE_{t-1} + \beta_5 \ln LFP_{t-1} + \beta_5 \ln GFCF_{t-1} + \varepsilon_t \quad (5)$$

Table 4.3: ARDL Long Run Form
Dependent Variable: D(LNUER).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGEE	0.286887	0.166401	1.724076	0.1126
LNCPS	-0.243783	0.336347	-0.724795	0.4837
LNASE	-0.045190	0.097342	-0.464239	0.6515
LFP	-0.159880	0.013999	-11.42112	0.0000
LNGFCF	-0.161498	0.202984	-0.795620	0.4431
C	11.00878	0.767451	14.34459	0.0000

Source: Author's computation, EViews 10

From the results above, we could observe that labour force participation rate is statistically significant with a probability value of (0.0000) at 5% level of significance. The elasticity of UER with respect to LFP is about -0.159880, which implies that if labour force participation rate increases by 1 percent, on average, unemployment rate will decrease by about 0.159880 percent. Thus, UER is very responsive to variations in labour force participation in the country with respect to the Nigerian population in the long run. However, this relationship conforms to the a priori expectations, and the result is in tandem with the findings of Österholm (2010); Emerson (2011); and Kakinaka and Miyamoto (2012), that there is a long run equilibrium relationship between unemployment rates and labor-force participation rate, drawing inference from the Sweden, U.S and Japan economy respectively. Our result further highlights a positive relationship between government recurrent expenditure on education and unemployment rate in the long run in Nigeria, which does not conform to the a priori expectations of a negative relationship. This is however, insignificant given the probability value of (0.1126) which is greater than 0.05 at 5% level of significance. This is in line with the findings of Singh, D. and Shastri, S. (2020) in their

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investigation into the long run relationship between public expenditure on education and unemployment rate, which revealed that public expenditure on education is not a significant predictor of unemployment rate. Looking implicitly, it mirrors the outcomes of a neglected sector in the passed decades given that allocation of education on the federal budget is far less than 10% of the total budget on the average. On the other hand, credit to private sector, school enrolment rate, and gross fixed capital formation all conform to their a priori expectations, but are insignificant, i.e., statistically indifferent from zero.

Table 4.4: Short-Run Estimate for ARDL Model

Dependent Variable: D(LNUER).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNGEE)	0.046093	0.024750	1.862313	0.0895
D(LNGEE(-1))	-0.071547	0.023817	-3.003990	0.0120
D(LNGEE(-2))	-0.051561	0.015384	-3.351685	0.0065
D(LNCPS)	-0.020811	0.058976	-0.352874	0.7309
D(LNCPS(-1))	0.037080	0.053941	0.687407	0.5061
D(LNCPS(-2))	0.207601	0.055523	3.738973	0.0033
D(LFP)	0.013474	0.015767	0.854583	0.4110
D(LFP(-1))	0.070473	0.019398	3.633054	0.0039
D(LFP(-2))	0.136108	0.021425	6.352711	0.0001
CointEq(-1)*	-0.672715	0.064487	-10.43172	0.0000
R-squared	0.873420	Mean dependent var		0.032364
Adjusted R-squared	0.806407	S.D. dependent var		0.109156
S.E. of regression	0.048028	Akaike info criterion		-2.955957
Sum squared resid	0.039213	Schwarz criterion		-2.476018
Log likelihood	49.90543	Hannan-Quinn criter.		-2.813246
Durbin-Watson stat	2.847377			

Source: Author's computation, EViews 10

Table 4.4 presents the findings of the ARDL Error Correction Regression estimation, which examines the long-term and short-term dynamics among the variables. The analysis reveals that the coefficient on the lagged error correction term is statistically significant and has the appropriate sign, providing evidence of a stable long-term relationship among the variables. Moreover, the CointEq (-1) of -0.672715 represents the speed of adjustment from the short-term equilibrium to the long-term equilibrium, indicating that it would take approximately one year to correct all deviations and bring the economy back to equilibrium. The Adjusted R-squared is 0.806407, indicating that 80.64% of the variation in unemployment rate is explained by variations in the explanatory variables, thereby confirming the model's statistical adequacy.
The model is checked for Heteroskedasticity using Breusch-Pagan-Godfrey test which follows the Chi-squares distribution.

Table 4.5: Breusch-Pagan-Godfrey Test for Heteroskedasticity

F-statistic	1.624694	Prob. F(15,11)	0.2105
Obs*R-squared	18.60315	Prob. Chi-Square(15)	0.2323
Scaled explained SS	1.599195	Prob. Chi-Square(15)	1.0000

Source: Authors' computation, EViews 10

From the table 4.5 above, the prob. Chi-square is 0.2323 which is greater than 0.05, therefore, we accept H0 and conclude that the model is homoscedastic.
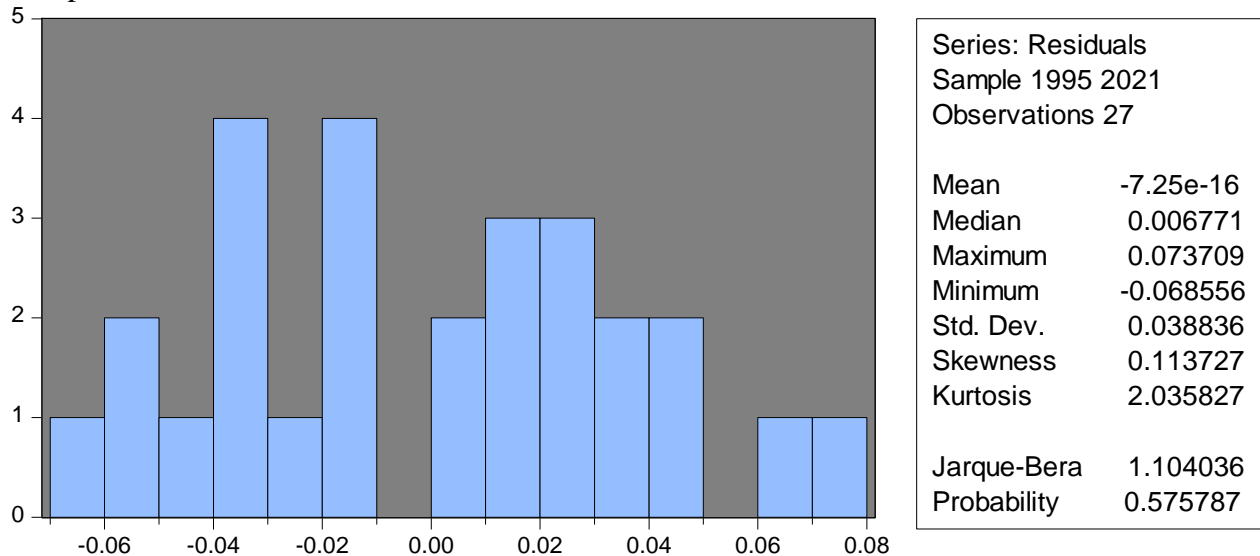

Series: Residuals	
Sample 1995 2021	
Observations 27	
Mean	-7.25e-16
Median	0.006771
Maximum	0.073709
Minimum	-0.068556
Std. Dev.	0.038836
Skewness	0.113727
Kurtosis	2.035827
Jarque-Bera	1.104036
Probability	0.575787

Figure 4.1: Normality Test

The model is also checked for normality which is shown in table 5 above. Following the decision rule, since 1.104036 < 5.99147, we accept the null hypothesis and conclude that the error term follows a normal distribution. To give credence to this, the P-Value is 0.575787 > 0.05, we, therefore, accept the null hypothesis.
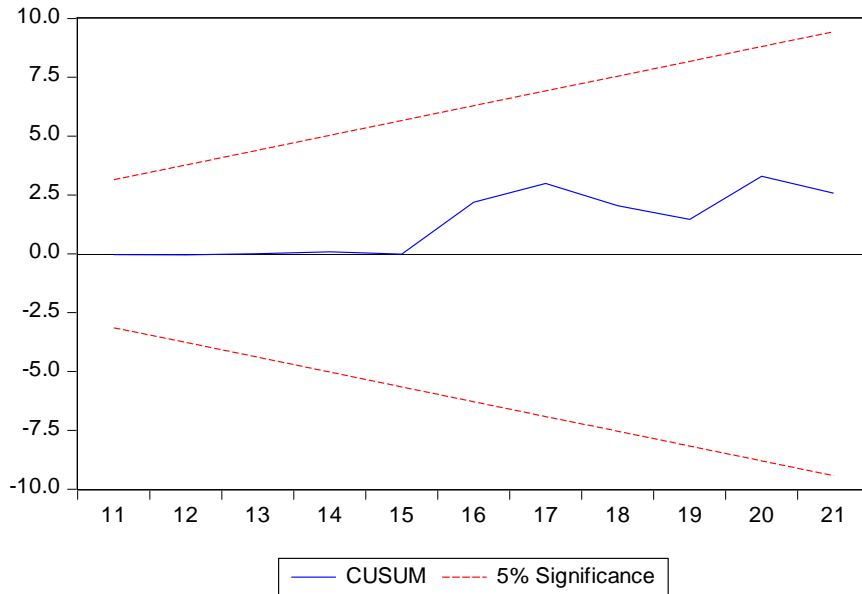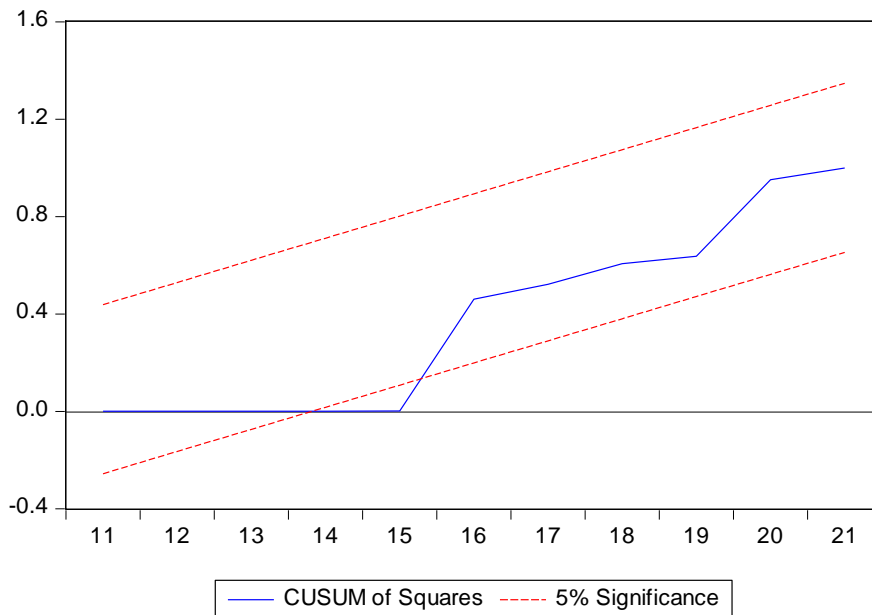
Figure 4.2: CUSUM Test

Figure 4.3: CUSUM of Squares Test

The CUSUM and CUSUMSQ tests are reported in Figure 4.2 and 4.3. Looking at the results, we fail to reject the null hypothesis at 5 percent level of significance and conclude that the ARDL model is stable. This is because the plot of the test falls within the critical limits. It is however

pertinent to note that the parameters of the regression model become unstable for a little while between 2014 and 2015 in figure 4.3, after which it became stables going forward.

CONCLUSION AND RECOMMENDATIONS

In conclusion, the research has furnished significant information regarding the correlation between investing in education and unemployment levels in Nigeria. Education can contribute to the development of new businesses and industries, which can create more employment opportunities. The high rate of unemployment in Nigeria remains a significant challenge that requires urgent attention. Addressing the issue will require a concerted effort by the government, private sector, and civil society to create an enabling environment for job creation and economic growth that secures a more prosperous future. The study recommends that:

1. While government policy decisions are important for the profitability and sustainability of businesses, human capital investment is also crucial in creating a pool of skilled labour force and highly educated manpower. Educational financing has a critical implication for employment. It is an established fact that the population of Nigeria is youth with youth unemployment being predominant as well. This calls for an actionable and working fiscal policy in the educational sector given that the dividends of education are in two folds, to the individual and the economy.

2. Collaborate with Tech giants like google, Facebook, Microsoft etc. to deepen technology locally.

3. It has remained an arguable position that the quality of the school system has been compromised. The emphasis has shifted from quality to quantity. The government should improve that quality of these institutions especially those that are owned by the federal government. This can be achieved through better teacher training, investment in educational research & development, Invest in science, technology, engineering and mathematics (STEM) and the establishment of vocational training centers that provide practical skills to students. Investment in the development of labor's human capital through value-based education is necessary to significantly increase economic productivity, and then spur the necessary development, influencing both the macro- and micro-economies, unemployment inclusive.

4. Furthermore, the finding of our study reveals that an increase in labor force participation rates can lead to a reduction in unemployment rates. The government can therefore boost labor force participation rates through policies that encourage training and skills development, incentives and framework that will help achieve this end especially among women and youth.

5. In addition, private sector investment can help to create jobs and reduce unemployment. This gives policy makers the mandate to create an enabling environment for private sector investment in Nigeria through policies that encourage entrepreneurship,

providing them with incentives and support, encourage innovation, and create a favorable business climate.

6.	Lastly, PPPs can be an effective way of reducing unemployment rates in Nigeria. Therefore, it is recommended that the government promote Public-Private Partnership in various sectors and create policies that increase access to finance for small and medium-sized enterprises (SMEs), as well as training programs and mentoring for entrepreneurs. This can be achieved through partnerships with financial institutions and the establishment of government-backed loan schemes.

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