



## RESEARCH ARTICLE

### COMPARATIVE ANALYSIS OF EDUCATION AND UNEMPLOYMENT RATE IN NIGERIA (1993-2023)

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#### ABSTRACT

This study examined the nexus between education and the unemployment rate in Nigeria (1993–2023), employing a comparative analysis. An ex-post facto research design was adopted, guided by a single objective, corresponding research question, and hypothesis. Data for the study were sourced from the World Bank (2024) for the specified period. The Autoregressive Integrated Moving Average (ARIMA) model was utilized for analysis, conducted using the SPSS software package. The results revealed that education expenditure, with a coefficient of 0.002 at lag 0, has a positive and statistically significant correlation with the unemployment rate ( $p < 0.001$ ). This highlights the crucial role of increased investment in education as a medium of reducing unemployment. Based on these findings, the study recommends, among other measures, that: The government should increase fiscal allocations to education to improve quality and align with global standards and Education policies should emphasize job creation, entrepreneurship, and self-sustainability to address unemployment effectively.

**Keywords:** Education, Unemployment rate, GDP growth, Education Expenditure

**JEL Classification Code:** I25, J64, O40, I22

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## 1.0. INTRODUCTION

Since 1960, Nigeria's educational system has witness different transformations aiming at eliminating regional inequities, raising literacy, and enhancing access to school. These reforms have included efforts such as the First National Development Plan (1962–1968) and Universal Primary Education (UPE) adopted in 1976, both aimed at enhancing accessibility and creating national cohesion. In the 1970s, the expansion of higher education led to the founding of the National Universities Commission. Despite these efforts, substantial problems exist, including inadequate funding, infrastructural deficiencies, and geographical inequities (Harrison, 2024).

Education is viewed from two perspectives: as a tool for human capital development—empowering individuals with essential skills needed for economic progress—and as a means of personal growth that enables individuals to attain success in life and society (Kumar et al., 2017). Furthermore, educational results go beyond academic successes, embracing personal and social skills that prepare individuals to adapt to the increasing demands of society and the job market (Biggs & Tang, 2011). However, in Nigeria, the gap between education and work remains significant, with many graduates encountering problems in getting meaningful employment (Audu, 2011). The International Labour Organization (ILO, 2020) says that over 22% of young people in Nigeria are neither employed nor in education (NEET), a ratio that has remained essentially unchanged since 2005. This demonstrates that higher education alone does not necessarily assure employment, demonstrating that structural difficulties exist in the education-to-work transition (Cheatham & Randolph, 2020).

Unemployment, particularly among youth, is a complicated issue that reflects greater socio-economic challenges. Unemployment is a circumstance in which whose people capable and willing to work cannot obtain paid job (Emeh, Nwanguma, & Abaroh, 2012). Youth unemployment in Nigeria is particularly alarming, as it is typically driven by the difficulty young people have in moving from education to the workforce (Refrigeri & Aleandri, 2013). The World Bank Group (2019) emphasizes the relationship between unemployment and poverty, as unemployment rates remain high among Nigeria's youth population, with over 70% of the population under the age of 35, and approximately 53.4% of them unemployed (Federal Ministry of Budget and Economic Planning, 2022).

Despite a reported youth unemployment rate of 5.3% for those aged 15-34 in 2024 (National Bureau of Statistics, 2024), the real picture is more serious due to underemployment and a high incidence of discouraged workers. Furthermore, gender and regional inequities persist, with young women facing extra challenges like as cultural norms, restricted opportunities, and job discrimination, while rural areas and conflict-affected zones face even higher unemployment rates (Egbo, 2025).



The consequences of high youth unemployment are profound, extending beyond individual hardships to hinder national economic productivity. When young people are unable to access meaningful employment, their potential for economic contribution is underutilized, resulting in lower overall national growth. As such, addressing youth unemployment requires a focus on reforming and improving the educational system. This involves better funding for educational institutions, enhancing the quality of teaching, and ensuring that students are equipped with the skills needed to thrive in a rapidly changing job market. It is against this background that this study seeks to examine the Comparative Analysis of Education and Unemployment Rate in Nigeria (1993-2023).

### **Objective**

To examine the Comparative Analysis of Education and Unemployment Rate in Nigeria (1993-2023)

### **Research Question**

What is the relationship between education expenditure and unemployment rates in Nigeria (1993–2023)?

### **Hypothesis**

Null Hypothesis ( $H_0$ ): Education expenditure has no significant relationship with unemployment rates in Nigeria (1993–2023).

## **2.0. CONCEPTUAL CLARIFICATION AND EMPIRICAL REVIEW**

### **2.1.0. Conceptual Clarification**

#### **2.1.1. Unemployment and Unemployment Rate**

Hayes (2024) Unemployment transpires when individuals actively pursue employment yet are unable to secure positions, indicating economic vitality. The unemployment rate, calculated as the number of jobless individuals divided by the labour force, does not account for those exiting due to retirement, education, or disability. Unemployment is categorized as voluntary (job transitions) or involuntary (layoffs) and encompasses four types: frictional (short-term transitions), cyclical (economic downturns), structural (technology-induced displacement), and institutional (policy-related reasons). According to Organisation for Economic Co-operation and Development (OECD) (2024) Unemployed people are those of a working age who do not have a job, are available for work and have taken specific steps to find a job in the previous four weeks. Bosi (2015) asserted that unemployment occurs when those who are capable and willing to work cannot secure employment at the prevailing wage rate. In other words, it delineates a scenario where individuals who are capable, eager, and within the age parameters of the workforce are unable to secure suitable employment.



National Bureau of Statistics (2024) grew from 8.40 percent in the first quarter of 2024. Nigeria's youth unemployment rate averaged 21.40 percent from 2014 to 2024, with an all-time high of 53.40 percent in the fourth quarter of 2020 and a record low of 6.50 percent in the second quarter of 2024. OECD (2024) The unemployment rate shows the percentage of the labour force that is unemployed. The labour force consists of all employees, self-employed individuals, unpaid family workers, and the unemployed. According to the International Labour Organization (ILO, 2023), the unemployment rate is an important indication of labour market health since it reflects the economy's ability to create jobs and absorb workers. This metric eliminates people who are not actively looking for job, such as retirees, students, or those who are unable to work due to a condition.

### **2.1.2. Concept of Education and Employment Opportunities**

Okoduwa (2023) Education can be clearly described as a form of human capital investment. Human capital is defined as an individual's knowledge, capabilities, and skills obtained via education, training, and experience that enable him to be more productive and hence increase his earning potential. Education can be defined as a process that leads to the accumulation of comprehensive knowledge and human capital. (Figueroa, 2015). Johnson and Carter (2023) define education as the structured development of intellectual and practical skills that empower individuals to solve problems, innovate, and contribute to economic and social progress.

C. & K. Careers Online (n.d.) highlights that education serves as a gateway to better job opportunities and higher income, as increased educational attainment enhances labour force participation and earning potential. Pay disparities often result from differences in human capital (training and skills) or knowledge capital (further training and experience). The relationship between education achievement and earnings highlights differences in human capital distributions (Adeyemi & Fakolujo, 2023). Unemployment can be lessened by stressing business and practical skills in school. Entrepreneurship education is a critical factor for making students self-employed and self-reliance, by reducing dependence on the official labour markets (Olawe, 2019).

Unemployment in Nigeria continues to climb despite the country's abundant human and natural resources, with chronic youth unemployment being particularly noticeable. Thousands of graduates enter the labour market each year, yet many struggle to obtain jobs as a result of poor educational levels they attained. This condition is mirrored in the enormous number of youth hawkers on the streets, who could have been gainfully employed if properly educated (Audu, 2011). Additionally, the increasing anger among poorly educated and unemployed youth in Nigeria raises fears about potential civil upheaval, as shown in earlier events like the Arab Spring and the Niger/Delta situation before the amnesty announcement (Tukur & Aguiyi, 2022). Cybercrime has also become a big concern, harming Nigeria's



international reputation. Onadipe (2012) notes that Nigerian scams cost the UK economy £150 million annually, with victims suffering financial losses, mental pain, and even suicides. In Australia, Nigerian scams result in at least \$36 million in losses each year, with 80% of the cash being fraud-related.

## **2.2. Empirical Review**

Datti et al. (2024) conducted research on the Effect of Education on Youth Unemployment in Nigeria. This study is guided by two specific objectives. This study employed secondary data of a period from 1990 to 2021 estimation technique. Also, Autoregressive Distributive Lag model (ARDL) and the Causality test was employed to examine the causal relationship between education and youth unemployment. The findings indicate that education impacts positively on youth unemployment if it is in line with the labour market demand. The study recommended that Nigeria's educational policies must change towards the creation of more jobs opportunities to the teeming youths.

Furthermore, Agnes and Ede (2016) Education and Unemployment in Nigeria: A Critical Analysis. This study examined the issue of education and unemployment in Nigeria based on the review of extant literature. Despite Nigeria being acclaimed as the 'giant of Africa' and the second largest economy in Africa as well as being blessed with abundant human and natural resources, the country has continued to grapple with a high unemployment rate particularly among the youth and graduates with the severe attendant consequences. The major causes were attributed to the political instability and policy inconsistencies of governments in the socio-economic and educational developments, neglect of the agricultural sector and the inability of higher or university education to provide graduates with the requisites entrepreneurial skills and training to become employers or employable after graduation. While the education-unemployment gap is widening, the paper suggests that the gap can be bridged by restructuring the education system with more emphasis on entrepreneurship, diversification of the Nigerian economy and re-prioritization of the agricultural sector, among others.

Moreover, Silva and Oshilike (2023) This study empirically explored the relationship between investment and expenditures in education and their impact on the rate of joblessness in Nigeria from 1991 to 2021. The unit root test, ARDL technique, bounds test, Breusch-Godfrey serial correlation LM test, and CUSUM test were utilized. The unemployment rate (UER) served as the dependent variable, while federal government recurrent expenditure (GEE), credit to the private sector (CPS), average school enrolment rate (ASE) as a proxy for literacy rate, labour force participation rate (LFP), and gross fixed capital formation (GFCF) functioned as the independent variables. The findings indicated that, other from UEM, which is stationary at the level, the other variables are stationary at the first difference at the 5% significance level. The report proposed, among other measures, the establishment of an





effective budgetary policy in the educational sector and the enhancement of institutional quality through improved teacher training.

Okoduwa, G (2023) research explores the impact of public investments in education on Nigeria's unemployment rate. The study is guided by three objectives with corresponding research questions and hypotheses, using a 31-year lagged secondary data set encompassing unemployment, government budget allocation to education, and economic growth, the study employs the ARDL model for analysis. The results reveal a significant positive relationship between government budget allocation to the education sector and the unemployment rate. These findings carry practical implications, particularly in raising awareness about the need to reevaluate the government's spending efficiency, especially concerning the fulfilment of Higher Education of Learning (HEL).

### 3.0. METHODOLOGY

The research work utilized an ex-post facto research design. The data used in this research were obtained from the World Bank (2024) for the period 1993 to 2023. Autoregressive Integrated Moving Average (ARIMA) technique was employed for analysis using the SPSS software package. The specified model form was modified and adapted from Datti et al. (2024), as provided below:

$$YUR_t = \beta_0 + \beta_1 (EDU_t) + \beta_2 (RGDP_t) + \epsilon_t \quad \text{-----} \quad \text{-----} \quad \text{Equation 1}$$

Where:

YUR = Youth Unemployment Rate (Percentage of Youth Unemployed, aged 15-24)

EDU = Annual Education Expenditure (Naira)

RGDP = Real GDP Growth Rate (%)

$\beta_0$  = Intercept term

$\beta_1, \beta_2$  = Slope coefficients for education expenditure and GDP growth rate, respectively

$\epsilon_t$  = Error term, representing unobserved factors or noise in the model

$\beta_1$  indicates the effect of education expenditure on youth unemployment.

$\beta_2$  measures the effect of the real GDP growth rate on youth unemployment, serving as a control variable.

$\epsilon_t$  captures other factors not included in the model that might affect youth unemployment rates

Here,  $\beta_0$  is the intercept,  $\beta_1$  and  $\beta_2$  are the slope coefficients representing the effects of education expenditure (EDU) and real GDP growth rate (RGDP) on youth unemployment (YUR), and  $\epsilon_t$  is the error term capturing random variations not explained by the model. Education expenditure (Real total expenditure).



## 4.0. PRESENTATION OF RESULTS AND DISCUSSION

### 4.1. PRESENTATION OF RESULT

The results obtained in the course of this study are presented accordingly in what follow:

**Table 1: Model Fit Summary**

Fit Statistic	Mean	Min	Max	Percentile (50)
Stationary R-squared	0.737	0.737	0.737	0.737
R-squared	0.737	0.737	0.737	0.737
RMSE	0.321	0.321	0.321	0.321
MAPE	5.740	5.740	5.740	5.740
MAE	0.237	0.237	0.237	0.237

Source: Authors' Analysis (2024).

The table highlights strong model performance, with R-squared and Stationary R-squared values of 0.737 indicate the model explains 73.7% of the variance in the dependent variable, demonstrating strong predictive ability. The low RMSE (0.321) and MAE (0.237) reflect high accuracy in predictions. Additionally, the MAPE of 5.74% confirms that the model's predictions deviate minimally in percentage terms, emphasizing its reliability for analysis.

**Table 2: ARIMA Model Summary**

Model	Predictors	Stationary R-squared	R-squared	RMSE	MAPE	Normalized BIC
UNEMPLOYMENT RATE-Model_1	2	0.737	0.737	0.321	5.740	-1.936

Source: Authors' Analysis (2024).

Table 2 shows the ARIMA model's strong performance, with two predictors achieving R-squared values of 0.737, explaining 73.7% of variance. Low RMSE (0.321) and MAPE (5.74%) indicate accurate predictions, while the Normalized BIC of -1.936 confirms model efficiency.

**Table 3: ARIMA Model Parameters**

Variable	Transformation	Parameter	Estimate	SE	t	Sig.
Unemployment Rate	No Transformation	Constant	3.147	0.126	25.055	0.000
Education Expenditure	No Transformation	Lag 0	0.002	0.000	7.437	0.000
GDP Growth Rate	No Transformation	Lag 0	-0.109	0.029	-3.707	0.001

Source: Authors' Analysis (2024).



The ARIMA model indicates that the constant term has a significant estimate of 3.147 ( $p < 0.001$ ). Education expenditure, with a coefficient of 0.002 at lag 0, exerts a positive and statistically significant influence ( $p < 0.001$ ) on the unemployment rate. As a control variable, the GDP Growth Rate exhibits a substantial negative correlation with unemployment, evidenced by a coefficient of -0.109 at lag 0 ( $p = 0.001$ ). This indicates that education expenditure positively influences the reduction of unemployment, whereas GDP Growth Rate adversely affects the unemployment rate. All predictors exhibit statistical significance, hence affirming the model's validity and dependability.

#### **4.2. Discussion of Findings**

Education expenditure, with a coefficient of 0.002 at lag 0, demonstrates a positive and statistically significant correlation with the unemployment rate ( $p < 0.001$ ). This finding underscores the significance of increased investment in education as a strategy for reducing unemployment. Datti et al. (2024) similarly discovered that education has important impact on youth unemployment when aligned with labour market demands. Okoduwa (2023) further identified a strong and meaningful nexus between government budget allocations to the education sector and unemployment rates, emphasizing the significance of targeted educational spending. Riddell and Song (2011) further showed that education reasonably enhances the re-employment rates of the unemployed, reinforcing its role in addressing unemployment challenges. Okoli et al. (2024) added that government expenditure on education, along with higher primary, secondary, and tertiary graduation rates, significantly reduces unemployment in Nigeria in the short term as well as in the long term. Ramza et al. (2018) observed that population growth and education together contribute to a reduction in unemployment. Finally, Agboola et al. (2018) confirmed a notable relationship between educational expenditure (EE) and the unemployment rate (UR), both of which are critical drivers of economic growth.

### **5.0. CONCLUSION AND RECOMMENDATIONS**

#### **5.1. Conclusion**

This comparative study on education and youth unemployment in Nigeria from 1993 to 2023 reveals a statistically significant positive association between education expenditure and the unemployment rate (coefficient = 0.002,  $p < 0.001$ ). The findings underline the crucial need for increasing investment in education as a strategic strategy to combating unemployment.

Education has a crucial role in decreasing youth unemployment, which is a primary generator of social unrest, criminality, and instability. These issues threaten peace, which is a necessity for economic progress and sustainable development. For Nigeria to accomplish its developmental aspirations, the government and stakeholders must construct an education system aligned with the nation's economic goals and labour market demands.





This study underscores the necessity of creating fair access to quality education while ensuring curriculum are tailored to equip graduates with skills that satisfy market requirements. By bridging the gap between education and work prospects, Nigeria can create sustainable economic growth and alleviate the recurrent issue of youth unemployment.

## 5.2. Recommendations

This study recommends that:

1. The government should enhance financial investment in education to improve quality and match with global standards.
2. The government make education policies focus on increasing job development, entrepreneurship and self-sustainability.
3. The government should stimulate private sector participation in education by creating an enabling climate and offering incentives.
4. Vocational and technical education should be prioritized to provide youths with practical skills that fulfil labour market demands.

## Competing Interest

The authors declared that no conflicting interest exist in this manuscript.

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