



Untangling Unemployment Dynamics: A Study of Nigeria's Labour Market

by

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Abstract

One of the prominent and pressing challenges confronting Nigeria revolves around the pervasive issue of unemployment. To delve into the roots of this predicament, this study adopts the Autoregressive Distributed Lag (ARDL) bound approach, leveraging time series data spanning from 1990 to 2022. The independent variables considered in the model encompass inflation rate (INF), Gross Domestic Product (GDP), education (EDU), labor force participation rate, total government expenditure (TGE), and exchange rate. The Unit Root test outcomes reveal a mixture of $I(0)$ and $I(1)$ series, necessitating the utilization of the ARDL approach. Notably, the research findings spotlight INF, GDP, EDU, and TGE as negatively and significantly influencing unemployment (UNEM) both in the short and long run. However, EDU is identified as an insignificant factor in the long run, while exhibiting a positive influence in the short run. In light of these results, it is recommended, among other strategies, that efforts be concentrated on enhancing labor market flexibility. Policymakers are encouraged to explore initiatives that bolster the adaptability of the workforce. This could involve the implementation of comprehensive training programs aimed at equipping workers with new skills and facilitating seamless labor mobility across various sectors. Furthermore, the study suggests the implementation of policies supporting a more flexible exchange rate regime to counter potential adverse long-term effects on unemployment. In essence, this research underscores the imperative for multifaceted solutions to address the multifaceted challenge of unemployment in Nigeria, emphasizing the enhancement of labor market dynamics and the formulation of policies conducive to economic resilience and adaptability.

Key words: Unemployment, Autoregressive Distributed Lag, Inflation Rate Gross Domestic Product

JEL Classifications: E24, C32, O11

1. Introduction

In the evolving Context of Nigeria's economic framework, the challenge of unemployment presents itself as a formidable and pervasive obstacle, casting shadow over the nation's socio-economic fabric. The multifaceted implications of widespread

unemployment extend beyond individual livelihoods, permeating various facets of society. This issue not only jeopardizes economic stability but also poses broader threats to social cohesion, potentially hindering the nation's overall progress. The interplay of factors contributing to unemployment necessitates a comprehensive exploration, considering economic, social, and policy-related dimensions. The repercussions of this challenge demand urgent attention and effective interventions to mitigate its impact. Addressing unemployment is crucial for nurturing resilience, fostering sustainable economic growth, and promoting equitable development within the Nigeria's economic Setting (Onwioduokit, 2013).

Unemployment has emerged as a pivotal concern for economists and policymakers in Nigeria since the early 1980s. Numerous studies have been dedicated to addressing this challenge. Economic consensus suggests that a higher gross domestic product (GDP) growth rate can act as a catalyst for employment generation, subsequently mitigating unemployment. This fundamental connection between output and unemployment holds a prominent place in macroeconomic theory and has demonstrated consistency in various countries, particularly in developed regions (Dahliah and Nur, 2021; Sahoo and Sahoo, 2019). Recognizing and understanding this relationship is crucial for formulating effective policies to combat unemployment and foster sustainable economic development.

An analysis of employment trends over the years underscores the inconsistency in the influx of new entrants into the labor market. Between 2007 and 2009, this rate experienced an upward trajectory, followed by a decline from 2009 to 2010, only to rise again from 2010 to 2021. Notably, an average of approximately 4-5 million new entrants annually has contributed to the active labor market during these periods (Egole, 2023). Concurrently, the unemployment rate in Nigeria exhibited fluctuations, witnessing a 3.77% increase in 2011 compared to 3.76% in 2010. Over the period from 2006 to 2011, the average unemployment rate stood at 3.8%, reaching a peak of 6% in 2020 and a record low of 3.7% in 2013 (Statista, 2023a). This data highlights the gravity of Nigeria's unemployment issue, echoing concerns about the paradox of economic growth without commensurate job creation. As expressed by Sohn (2020), it becomes a disconcerting scenario when a country with a seven percent economic growth rate struggles to provide employment for its citizens, reminiscent of a broken record – a nation rich in resources yet reliant on imports for essential commodities like refined fuel and tomatoes.

Exacerbating the issue of unemployment in the nation, other macroeconomic indicators have failed to exhibit proportional changes. Notably, the growth trajectory of the gross domestic product (GDP) has run counter to that of unemployment. An examination reveals that the Nigerian economy, measured by real GDP, expanded by 7.4 percent in the third quarter of 2011, a slight decrease from 7.9 percent in the corresponding quarter of 2010. In 2011, the real GDP growth rate settled at 5.31%, juxtaposed with an inflation rate of 10.83%. Subsequent years displayed a persistent discrepancy: in 2012, real GDP growth was 4.21%, while the inflation rate reached 12.22%; in 2013, real GDP growth stood at 5.49% with an inflation rate of 8.50%; and in 2014, the real GDP growth rate reached 6.23%, contrasting with a soaring inflation rate of

18.40%. Projections for 2015 to 2017 anticipate real GDP growth rates of 5.54%, 5.78%, and 5.80%, accompanied by inflation rates of 8.78%, 8.10%, and 7.52%, respectively (NBS, 2015). These statistics underscore a disconcerting scenario where escalating unemployment rates, coupled with diminished productivity, threaten the overall welfare of the popular.

The global economic upheaval, commencing in 2007–2008, significantly impacted worldwide unemployment figures, surging from 178 million in 2007 to 197 million in 2012. International Labour Organization estimates reached a zenith in 2009, with 212 million unemployed individuals globally. Correspondingly, the United States witnessed a shift in its unemployment rate from 9.6% in 2010 to a subsequent decline to 7.7% in February 2013. Across the Euro area, the unemployment rate ascended from 9.6% in 2009, persisting in an upward trajectory to 10.1% in 2010, 10.7% in 2011, and 11.7% in 2012. Greece experienced a fluctuating pattern, starting at 7.7% in 2008 and escalating to 9.4% in 2009, 12.5% in 2010, 17.3% in 2011, and an estimated 23.8% in 2012.

In the 1960s and 1970s, the Nigerian economy provided jobs for the growing population, fostering a relatively peaceful industrial environment (Adegbite and Adegbite, 2021). Following the oil boom in the 1970s, there was a notable surge in youth migrating to cities in search of wage employment (Amare *et al.*, 2023). However, the 1980s economic collapse revealed the emergence of unemployment challenges. The devaluation of the naira occurred due to the IMF-World Bank Structural Adjustment Programme (SAP), hindering companies from importing necessary raw materials for production. This resulted in a rapid increase in overall price levels and a significant decline in real wages, weakening the purchasing power of wage workers. The labor market faced an influx of individuals beyond the economy's capacity to absorb, exacerbated by the swift growth of the education sector (Audretsch *et al.*, 2021).

Nigeria's unemployment predicament is tied to a myriad of factors encompassing various dimensions. The issues span from the quality of education and skill shortages to agricultural negligence, inflation, export challenges, foreign direct investment fluctuations, population growth rates, labor force participation rates, gross fixed capital formation, interest rates, and the management of natural resources. Moreover, corruption, erratic power supply, and additional socio-economic challenges compound the problem. The repercussions extend beyond joblessness, impacting the nation's socioeconomic landscape with diminished national output, human resource underutilization, heightened poverty levels, and a surge in criminal activities such as armed robbery and prostitution, reflecting the multifaceted nature of Nigeria's unemployment crisis.

Despite the government's implementation of various employment creation programs, the outcomes have been disappointing. Notably, the National Directorate of Employment (NDE), established in 1986, aimed to tackle mass unemployment by designing and executing suitable programs to provide jobs for the substantial number of unemployed individuals (Akintoye, 2008). Additionally, the National Economic Employment and Development Strategy (NEEDS), introduced in March 2004, sought to address Nigeria's macroeconomic imbalances, social shifts, and structural issues (Popoola,

2020). Other initiatives include the National Poverty Eradication Programme (NAPEP), the National Economic Emancipation and Development Strategy (NEEDS), and the Small and Medium Scale Enterprise Development Agency of Nigeria (SMEDAN). Unfortunately, the overall impact of these efforts has fallen short of expectations (Alenda-Demoutiez and Mügge, 2020).

This paper aims to understand the main causes of unemployment in Nigeria. By looking at economic, social, and policy factors, the paper seeks to understand the complexities of unemployment. Using evidence and careful analysis, the paper identifies and explains the crucial factors affecting unemployment. It provides valuable insights for both academic discussions and the development of specific actions and policies to tackle this important issue in Nigeria.

2. Materials and Methods

The research design for studying the determinants of unemployment involves adopting an ex-post facto approach. Utilizing historical data, this retrospective design allows the examination of variables after the occurrence of the phenomenon (unemployment). Data on inflation, GDP growth, education levels, labor force participation, government expenditure, and exchange rates were collected over a specified period in Nigeria. Statistical methods, such as regression analysis, was employed to analyze the relationships between these variables and unemployment rates. This design facilitates a comprehensive understanding of the factors influencing unemployment, providing insights into effective policy interventions for mitigating unemployment challenges.

Econometric Model:

Unemployment=Inflation+GDP Growth+Education+Labor Force Participation Rate+5Government Expenditure+ Exchange Rate
Unemployment= $\beta_0 + \beta_1$ Inflation+ β_2 GDP Growth+ β_3 Education+ β_4 Labor Force Participation Rate+ β_5 Government Expenditure+ β_6 Exchange Rate+ ϵ
where:

- Unemployment is the dependent variable, representing the unemployment rate.
- Inflation is the inflation rate, capturing the impact of rising prices on unemployment.
- GDP Growth GDP Growth is the growth rate of the Gross Domestic Product, indicating the overall economic performance.
- Education is a measure of the education level of the population, as higher education might affect employability.
- Labor Force Participation Rate Labor Force Participation Rate is the percentage of the working-age population that is either employed or actively seeking employment.
- Government Expenditure Government Expenditure represents government spending, which may influence employment through public projects and programs.

- Exchange Rate Exchange Rate is the value of the local currency relative to other currencies, influencing international trade and employment.
- β_0 is the intercept, and ϵ is the error term representing unobserved factors affecting unemployment.

Rationale for Choosing the Independent Variables

The rationale behind the inclusion of inflation as an independent variable in the econometric model lies in its intricate relationship with the overall cost of living and its subsequent repercussions on economic activity and employment. The inclusion of inflation in the model acknowledges its dual role as a catalyst for increased business costs and a dampener on consumer spending, both of which can intricately shape the dynamics of unemployment within the economic landscape.

The rationale underpinning the incorporation of GDP growth as an independent variable in the econometric model is rooted in the fundamental relationship between the level of economic activity and employment dynamics. GDP, or Gross Domestic Product, serves as a comprehensive indicator of a nation's economic health, encompassing the total value of goods and services produced. In this context, GDP growth acts as a barometer for the expansion or contraction of economic activity. Recognizing the interconnected nature of GDP growth and employment provides a foundation for comprehending the broader economic dynamics influencing unemployment rates within the specified model.

The inclusion of education as an independent variable in the econometric model stems from the well-established notion that education plays a pivotal role in shaping an individual's employability and, by extension, impacting unemployment rates. Education is a cornerstone of human capital development, equipping individuals with the skills, knowledge, and qualifications sought after by employers in a dynamic job market. By incorporating education into the model, we acknowledge the multifaceted influence of human capital on employment outcomes. Education serves as a proxy for the quality of the labor force, with well-educated individuals contributing to a more skilled, innovative, and employable workforce, ultimately mitigating unemployment challenges within the broader economic landscape.

The incorporation of the labor force participation rate into the econometric model is grounded in its significance as a barometer of workforce engagement and its potential impact on unemployment dynamics. The labor force participation rate encapsulates the proportion of the working-age population actively engaged in the labor market, either through employment or active job-seeking. This metric provides insights into the vibrancy of the workforce, reflecting the willingness of individuals to participate in economic activities. Thus, including the labor force participation rate in the model acknowledges its role as a crucial determinant of labor supply dynamics, shedding light on how shifts in workforce engagement can influence the broader unemployment landscape.

The rationale for incorporating government expenditure as an independent variable in the econometric model is deeply rooted in the Keynesian perspective that posits the pivotal role of fiscal policy in influencing economic activity and employment. Government spending is a potent tool capable of stimulating economic growth and job

creation, particularly through strategic investments in public projects and programs. Increased government spending directly contributes to heightened demand for goods and services, fostering a positive ripple effect across various sectors. The inclusion of government expenditure in the model recognizes its potential to serve as an active policy lever, with well-directed spending fostering economic revitalization and contributing to a decline in unemployment rates.

The incorporation of the exchange rate as an independent variable in the econometric model reflects the intricate interplay between currency valuations, international trade dynamics, and their profound effects on employment. Exchange rates serve as a pivotal determinant of a nation's competitiveness in the global market, exerting a substantial influence on the fortunes of export-oriented industries and, consequently, on overall employment levels. Each of these variables reflects different aspects of the economic environment that can contribute to changes in the unemployment rate. The inclusion of these variables in the model allows for a comprehensive analysis of the various factors that may influence unemployment in Nigeria. Keep in mind that the specific relationships may vary, and the model should be tested empirically using relevant data to validate these theoretical justifications.

Apriori Expectations

Table 2.1: Apriori Expectations

Variables	Coefficient	Apriori expectation
INF	β_1	-
GRGDP	β_2	-
EDU	β_3	-
LFPR	β_4	-
TGE	β_5	-
EXR	β_6	+/-

Source: Researchers' computation, 2024

Data Source

As pointed out by Silverman (2013), method of data collection alludes to the ways and tools in which the researcher employs to collect data source for data. As it concerns this study, secondary source of data was relied on. The study relied on Central Bank of Nigeria (CBN) Statistical Bulletin, National Bureau of Statistic (NBS), World Development Indicators (WDI), Economic and Statistical reviews, World Bank, among others to extract secondary data. The sample period for the research ranged from 1990 to 2022.

Method of Data Analysis

E-views statistical package was used to analyze the data. This is following the fact that Griffiths, Hill and Lim (2012) has asserted the interface's standard and accuracy in terms of result. Descriptive statistics will be used to summarize the data and gain a clear overview of the variables. Correlation analysis will help understand the potential

relationships between the determinants of unemployment, and unemployment. Furthermore, multiple regression, which was aided by ARDL was used to pinpoint the nature, degree and direction of connection between the determinants of unemployment in Nigeria. Specifically, in order to better carry out the study's analysis, a stationarity test was carried out, since stationarity is an important assumption in any time series (Ben 2020). This test was aided by the Augmented Dickey Fuller Technique (ADF) to unit root testing. According to the above author, this test is very vital, as nonstationary variables can render the analysis spurious.

After the test, the ARDL bound test was then carried out to ascertain the long run connection between the chosen variables and unemployment in Nigeria, after which the long run ARDL was estimated. Spanning between 1990 and 2022, the ARDL model is given below:

$$\Delta UNEM_t = \beta_0 + \beta_1 INF_t + \beta_2 GDP_t + \beta_3 EDU_t + \beta_4 LFPR_t + \beta_5 \ln TGE_t + \beta_6 EXR_t + \beta_7 (UNEM)_{t-1} + \beta_8 \Delta (INF)_{t-1} + \beta_9 \Delta (GDP)_{t-1} + \beta_{10} \Delta (EDU)_{t-1} + \beta_{11} \Delta (LFPR)_{t-1} + \beta_{12} \Delta (\ln TGE)_{t-1} + \beta_{13} \Delta (EXR)_{t-1} + U_t \quad (3)$$

After the long run estimate, it was necessary to grasp the short run dynamics, whether the model will correct itself, and how long it will take the model to correct if there is any disequilibrium. The dynamics of the model in the short run is presented in equation 4 below:

$$\Delta UNEM_t = \lambda_0 + \sum_{i=1}^m \lambda_1 \Delta UNEM_{t-i} + \sum_{i=0}^n \lambda_2 \Delta INF_t + \sum_{i=0}^o \lambda_3 \Delta GDP_t + \sum_{i=1}^p \lambda_4 \Delta EDU_t + \sum_{i=0}^m \lambda_5 \Delta LFPR_t + \sum_{i=0}^n \lambda_6 \Delta \ln TGE_t + \sum_{i=0}^o \lambda_7 \Delta EXR_t + \delta ECT_{t-1} + v_t \quad (4)$$

$\lambda_1, \lambda_2, \lambda_3, \lambda_4, \lambda_5, \lambda_6$ and λ_7 are the estimated coefficients of equation 4 above. ECT is the component of the error correction term, while δ represents the component of the ECT, and how fast it will take for the model to adjust to the long run equilibrium, from the short run.

3. Results and Discussion

Data Visualization

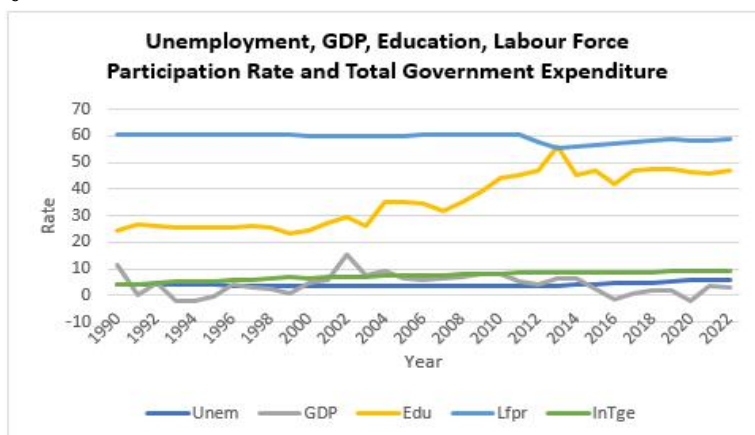


Figure 3. 1. Unemployment, GDP, Education, Labour Force Participation Rate and Total Expenditure

Source: Researchers' Computation, from MS Excel (2016)

The figure 4.1 presents the trend of UNEM, GDP, EDU, LFPR and TGE. Here, it can be seen that UNEM followed an almost steady trend throughout the period, however, this trend was breached in 2015, where this variable experienced an increasing trend up until 2022. Also, GDP growth rate was seen to have increased and decreased during the period of study, reaching negatives and positives. In 1993, 1994, 2016 and 2020, Nigeria's GDP experienced a negative growth. In the latter years (2016 and 2020), Scholars (Samuel *et al.*, 2021) blamed this decrease to deflation and COVID-19 pandemic respectively. In the former years (1993 and 1994), wide infrastructure gap and economic insecurity were blamed for the negative growth (Udeaja and Onyebuchi, 2015). Other years, GDP earmarked positive growth. EDU and TGE has followed the same trend over the years. Here, the two has marked increasing trajectory with EDU and TGE reaching their highest point in 2013 and 2020 respectively, and their lowest points in 1999 and 1990 accordingly. Similarly, LFPR was steady from 1990 to 2011, averaging 60, but decreased to 57 in 2012.

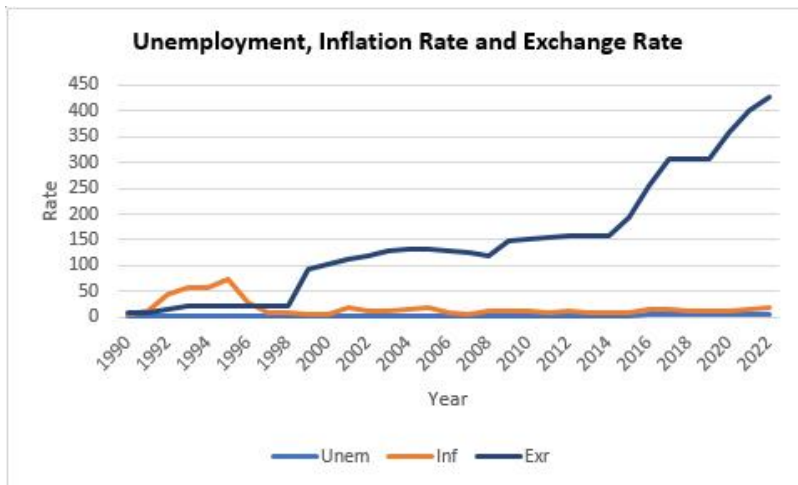


Figure 3. 2. Unemployment, Inflation Rate and Exchange Rate

Source: Researchers' Computation, from MS Excel (2016)

The figure 4.2 shows the stylized fact of UNE, INFL and EXR. It is evident, the fact that INF follows a cyclical trend throughout the study's period. It reached its maximum point in 1995, following economic mismanagement, political instability and huge external debt (Ndubuisi, 2017). Conversely, EXR experienced an increasing trend over the years (1990 to 2022).

Unit Root Test

Table 3.1: Unit Root Test

Variables	t-stat	P-value	Level of Integration
UNEM	-3.577974	0.0139	I(1)
INF	-4.301436	0.0021	I(1)
GDP	-3.683300	0.0093	I(0)
EDU	-7.638995	0.0000	I(1)
LFPR	-4.195572	0.0027	I(1)
Ln TGE	-4.710396	0.0009	I(0)
EXR	-3.903894	0.0055	I(1)

Source: Researchers' Computation, from EViews 10

All variables are stationary at level and first difference of I(0) and I(10), according to the results of the Augmented Dickey Fuller (ADF) unit root test. This calls for the model to be estimated using the ARDL analytical technique.

ARDL Bounds Test

Following the unit root test result which shows that all variables are stationary at first difference, there is an econometric justification to test for the existence of a long run relationship among variables. Consequently, the ARDL bond test was conducted and the result is presented as follows:

Table 3.2: ARDL Bounds Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Sig	I(0)	I(1)
F-statistic	37.23905	10%	1.99	2.94
K	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Source: Researchers' Computation, from EViews 10

The null hypothesis that there is no long-term relationship among the variables is rejected based on the ARDL bound test result, which demonstrates that the F-statistic statistic of 37.24 is greater than the lower and upper bound critical values of the bound test procedure. This suggests that there is a long-term relationship among the variables.

ARDL Long and Short Run Estimates

The long run cointegrating coefficients and the short run ARDL error correction model coefficients are reported as follows, after the bound test result demonstrating the presence of a long run relationship among variables:

Table 3.3: Long and Short Run Estimates

Long Run Estimates				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF	-0.007703	0.001891	-4.074240	0.0096
GDP	-0.162022	0.017822	-9.091339	0.0003
EDU	-0.012094	0.009422	-1.283560	0.2556
LFPR	0.060745	0.019730	3.078756	0.0275
LNTGE	-0.494580	0.064706	-7.643526	0.0006
EXR	0.013363	0.001166	11.46368	0.0001
C	4.222417	1.142992	3.694180	0.0141
Short Run Estimates				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INF)	-0.004216	0.000684	-6.161462	0.0016
D(GDP)	-0.098468	0.003498	-28.14657	0.0000
D(EDU)	0.032698	0.002416	13.53116	0.0000
D(LFPR)	0.156717	0.010736	14.59706	0.0000
D(LNTGE)	-0.963500	0.046481	-20.72874	0.0000
D(EXR)	0.006654	0.000358	18.60855	0.0000
CointEq(-1)*	-0.844928	0.039078	-26.73929	0.0000
R-squared	0.991490	Mean dependent var		0.061000
Durbin-Watson stat	2.034113			

Source: Researchers' Computation, from EViews 10

According to the calculated model, the unemployment rate (UNEM) is significantly impacted negatively by the inflation rate (INF) in the short term. It demonstrates that there is a 0.004216% drop in unemployment for every 1% increase in the inflation rate. The unemployment rate (UNEM) is significantly impacted negatively by the GDP growth rate. It demonstrates that a 1% increase in GDP causes the unemployment rate to rise by 0.098468%. The labor force participation rate (LFPR), exchange rate (EXR), and education level (EDU) all significantly and favorably affect unemployment. Here, an increase of 1% in EDU and LFPR will result in an increase in UNEM that is less than proportionate—that is, 0.032698%, 0.156717%, and 0.006654%, respectively. The error correction of -0.84 shows that about 84% of the deviation of the dependent variable from equilibrium due to changes in the explanatory variables are annually corrected to a long run equilibrium, annually. The adjusted R^2 of 0.96 shows that 96% of the changes in real GDP in the model is explained by changes in the explanatory variables of the model.

In the long run, Inflation (INF), Growth rate of Real Gross Domestic Product (GDP) and Total Government Expenditure (LNTGE) has significant and negative effects on real GDP. A 1% increase in INF leads to a 0.007703% decrease in UNEM, a 1% increase in GDP leads to a 0.162022% decrease in UNEM, and a 1% increase in LNTGE will bring about a 0.494580% decrease in UNEM. However, Education has a negative but insignificant impact on UNEM. On the converse, LFPR and EXR both has positive and significant impact on UNEM. A 1% increase in LFPR and EXR will respectively bring about a 0.0607745% and 0.013363% increase in UNEM.

Table 3.4: Post Estimation Diagnostics

Diagnostics	F-statistic	P-value
Normality Test	1.1255	0.5696
Breusch-Godfrey Serial Correlation LM Test:	3.163210	0.1824
Heteroskedasticity Test: Breusch-Pagan-Godfrey	3.571827	0.0805

Source: Researchers' Computation, from EViews 10

The results of the Jarque Bera normality test, the LM test for autocorrelation, and the ARCH test for heteroscedasticity show that the error term of the estimated model is normally distributed and that neither autocorrelation nor heteroscedasticity exists. The null hypothesis of the corresponding test, which asserts that there is no autocorrelation, no heteroscedasticity, and that the error term is normally distributed, cannot be rejected because the P values are greater than the permissible levels of statistical significance.

The negative impact of inflation on short and long-term unemployment is a noteworthy finding that aligns with conventional economic wisdom. The Phillips curve, a well-established concept in economic literature, posits an inverse relationship between inflation and unemployment in the short run (Tunah, 2010). As prices rise, businesses may increase production, leading to higher demand for labor and a subsequent reduction in unemployment. The literature supports the notion that policymakers may exploit short-term trade-offs between inflation and unemployment to fine-tune economic performance. However, it is crucial to note that sustained inflationary pressures can erode real wages, potentially negating its impact on employment. Thus, striking a balance in managing inflation becomes imperative for achieving long-term employment.

Findings also showed that GDP has a negative impact on Unemployment in the short-run. This finding follows the literature (Alam, Nur Alam and Hoque, 2020; Pakistan by Aqul, Ali, and Seema, 2014) which found negative connection between the variables. In the long run, the negative impact of GDP growth on unemployment aligns with the literature on sustainable development in Pakistan by Aqul, Ali, and Seema, 2014). It suggests that over time, as the economy matures and adjusts to growth patterns, unemployment may decrease. Policymakers could leverage this insight by implementing long-term strategies that promote sustainable economic development, such as investments in infrastructure and innovation.

The short-term impacts of LFPR and EXR on unemployment reveal intriguing insights. The finding that a 1% increase in LFPR and EXR results in proportionately smaller increases in unemployment suggests that these variables contribute to a more efficient allocation of labor. This resonates with literature (Sinan, 2022) emphasizing the importance of workforce participation and international trade in fostering economic growth. In the long run, the positive impact of LFPR and EXR on unemployment signals potential challenges. While higher LFPR indicates increased workforce engagement, it may also strain job opportunities if not met with corresponding economic expansion. Similarly, a consistently positive effect of exchange rates on unemployment implies that while international trade boosts economic growth, it may also intensify competition in the labor market over time.

EDU was seen to have a positive and significant impact in the short run, suggesting that as the level of education increases, Unemployment increases. This finding negates the human capital theory, and does not follow that of the existing literature. Kartini, *et al* (2023) suggests that education negatively decreases unemployment. In the long run, the insignificant impact of education on unemployment raises intriguing questions about the role of human capital in shaping employment trends. Existing literature suggests that investments in education generally lead to enhanced productivity and lower unemployment rates. However, the lack of significance in this study may indicate broader structural issues within the education-employment linkage. Possible explanations could be a lag in the realization of the benefits of education on employment or a mismatch between the skills imparted by the education system and those demanded by the labor market. Policymakers may need to delve deeper into educational policies and industry requirements to address this incongruence and maximize the positive impact of education on long-term employment stability.

The findings provide policymakers with valuable insights for crafting effective strategies to mitigate unemployment in Nigeria. The nuances revealed by the ARD analysis underscore the need for a balanced and adaptive approach. Policymakers should consider the short-term dynamics of inflation and GDP growth while addressing the long-term challenges posed by LFPR, EXR, and the intricacies of the education-employment nexus.

Further research in this domain could explore the specific mechanisms through which education influences unemployment and delve into the quality of education provided. Additionally, understanding the sectoral implications of GDP growth and its impact on unemployment could inform targeted interventions. As Nigeria aims for sustained economic development, these findings pave the way for nuanced policies that consider the multifaceted nature of unemployment dynamics.

4. Conclusion and Recommendations

The study on the Determinants of Unemployment in Nigeria has been duly carried out using annual time series data that spans for a period of 33 years, from 1990 to 2022. Unit root test was employed to ascertain the stationarity of the variables, since it is an important assumption in time series data. The result of the Unit Root test allowed for the use of ARDL analytical. Summary of findings is given below:

- i. Inflation rate has a negative and statistically significant impact on unemployment rate in Nigeria in the long and short run.
- ii. GDP has a negative and statistically significant impact on unemployment rate in Nigeria in the long and short run.
- iii. Education has a negative and significant impact in the short run. It was also seen to be negative but insignificant in the long run.
- iv. Labour Force Participation Rate has a positive and statistically significant impact on unemployment rate in Nigeria in the long and short run.
- v. Total Government Expenditure has a negative and statistically significant impact on unemployment rate in Nigeria in the long and short run.

- vi. Exchange Rate has a positive and statistically significant impact on unemployment rate in Nigeria in the long and short run.

With the use of the ARDL to examine data sourced from the CBN Statistical Bulletin, our analysis focuses on the determinants of Unemployment (UNEM) in Nigeria. Inflation (INF), Growth Rate of Real Gross Domestic Product (GDP), Education (EDU), Labour Force Participation Rate (LFPR), log of Total Government Expenditure (LNTGE) and Exchange Rate (EXR). The results indicate that all the variables exerted a statistically significant influence on UNEM in the short run. However, EDU had a significant connection with Unemployment in the long run, implying that it does not determine Unemployment in the long run. Hence, the analysis underscores the prominence of INF, GDP, LFPR, LNTGE, and EXR in determining UNEM in Nigeria. Specifically, the result shows that while INF, GDP, and LNTGE negatively impact on UNEM in the short run, the aforementioned variables, including EDU negatively connects with UNEM in the long run.

Given the substantial and enduring adverse effects of inflation on unemployment, it is crucial for policymakers to adopt proactive measures focused on inflation targeting. Specifically, the Central Bank of Nigeria should establish a well-defined inflation target and implement monetary policies aimed at stabilizing prices. Transparent communication of these targets is essential to anchor inflation expectations within the economy. By taking this approach, policymakers can contribute to fostering a more stable economic environment, ultimately promoting sustained employment growth. Recognizing the inconclusive impact of education on unemployment in both the short and long run, a reevaluation of educational policies is recommended. Strengthening collaboration between educational institutions and industries is paramount to ensure that curricula align with the evolving skill demands of the labor market. Moreover, targeted investments in vocational and technical education can address specific skill gaps, thereby enhancing the employability of individuals.

In light of the significant influence of Labor Force Participation Rate (LFPR) and Exchange Rate (EXR) on unemployment, policymakers should focus on improving labor market flexibility. This entails exploring measures to enhance the adaptability of the workforce, such as implementing training programs that allow workers to acquire new skills. Additionally, facilitating ease of labor mobility across sectors can further enhance labor market flexibility. Furthermore, policies supporting a more flexible exchange rate regime can play a pivotal role in mitigating potential long-term negative effects on unemployment. A comprehensive and strategic approach addressing these aspects can contribute to a more resilient and dynamic labor market, fostering economic stability and sustained employment opportunities.

References

- Sinan, O. B. (2022). The Relationship between the Exchange Rate, Inflation, and Unemployment in Turkey, 2014–2021.
- Kartini, S. Y. D., Astuty, P., & Wibawa, H. W. (2023). Determinants of Unemployment in Sumatra. *International Journal of Current Research and Applied Studies*, 2(3), 01-14.

- Adegbite, O., & Adegbite, O. (2021). The Emerging Nigerian Economy. *Perspectives on Industrial Development in Nigeria: Issues, Challenges and Hard Choices*, 1-20.
- Alenda-Demoutiez, J., & Mügge, D. (2020). The lure of ill-fitting unemployment statistics: How South Africa's discouraged work seekers disappeared from the unemployment rate. *New Political Economy*, 25(4), 590-606.
- Aqul, A., & Seemab. (2014). Determinants of Unemployment in Pakistan. *International Journal of Physical and Social Sciences*, 10(14), Issue 4, ISSN: 2249-5894.
- Audretsch, D. B., Lehmann, E. E., Menter, M., & Wirsching, K. (2021). Intrapreneurship and absorptive capacities: The dynamic effect of labor mobility. *Technovation*, 99, 102129.
- Market Variables. *A paper presented at ISSER/CORNELL/world Bank Conference on shared Growth in Africa held in Accra, Ghana*.
- Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money*. London: Macmillan and Co., Ltd.
- Kiley, M. T. (2022). Unemployment risk. *Journal of Money, Credit and Banking*, 54(5), 1407-1424.
- Onwioduokit, E. A. (2013) "Unemployment and economic growth in Nigeria: an empirical re-examination," *Bullion: Vol. 36: No. 3, Article 12*. Available at: [Link to the source](#)
- Sahoo, M., & Sahoo, J. (2019). The relationship between unemployment and some macroeconomic variables: Empirical evidence from India. *Theoretical & Applied Economics*, 26(1).
- Samuel, U. D., Odo, E. S., Atewologun, O. M., Adeyeye, A. A., & Olaegbe, T. D. (2021). COVID-19 Pandemic: Health Challenges and a Critical Study of the Structure of the Nigeria Economy. *Path of Science*, 7(11), 4001-4021.
- Udejaja, E. A., & Onyebuchi, O. K. (2015). Determinants of economic growth in Nigeria: evidence from error correction model approach. *Developing Country Studies*, 5(9), 27-42.
- Ndubuisi, P. (2017). Analysis of the impact of external debt on economic growth in an emerging economy: Evidence from Nigeria. *African Research Review*, 11(4), 156-173.
- Statista (2023a). Nigeria: Unemployment rate from 2003 to 2022. [Link to the source](#)
- Statista (2023b). Unemployment rate in the United Kingdom (UK) from 1999 to 2022. [Link to the source](#)
- Tunah, H. (2010). The Analysis of Unemployment in Turkey. Some Empirical Evidence using Cointegration Test. *European Journal of Social Sciences*, 18(1), 18-38.

Appendix

Appendix 1: Data Set

Year	UNEM	INF	GDP	EDU	LFPR	LNTGE	EXR
1990	3.9612	7.3644	11.77689	24.71377	60.712	4.098805	8.038285
1991	3.978	13.00697	0.358353	26.52723	60.697	4.19847	9.909492
1992	3.931	44.58884	4.631193	26.06131	60.66	4.530419	17.29843
1993	3.982	57.16525	-2.03512	25.86876	60.603	5.253471	22.0654
1994	3.97	57.03171	-1.81492	25.64641	60.532	5.080741	21.996
1995	3.945	72.8355	-0.07266	25.51075	60.451	5.516521	21.89526
1996	3.898	29.26829	4.195924	25.72137	60.424	5.820728	21.88443
1997	3.9	8.529874	2.937099	25.8893	60.382	6.059626	21.88605
1998	3.893	9.996378	2.581254	25.78298	60.331	6.188497	21.886
1999	3.901	6.618373	0.584127	23.53617	60.277	6.854027	92.3381
2000	3.852	6.933292	5.015935	24.59316	60.225	6.55258	101.6973
2001	3.838	18.87365	5.917685	27.01616	60.239	6.925592	111.2313
2002	3.751	12.87658	15.32916	29.59482	60.245	6.92577	120.5782
2003	3.812	14.03178	7.347195	26.10466	60.248	7.111503	129.2224
2004	3.789	14.99803	9.250558	34.97756	60.249	7.316016	132.888
2005	3.807	17.86349	6.438517	34.93866	60.249	7.559924	131.2743
2006	3.803	8.225222	6.059428	34.43886	60.294	7.619724	128.6517
2007	3.791	5.388008	6.59113	31.85162	60.326	7.804209	125.8081
2008	3.782	11.58108	6.764473	35.36886	60.349	8.083582	118.5667
2009	3.763	12.53783	8.036925	39.21422	60.366	8.146996	148.88
2010	3.755	13.74005	8.005656	44.1983	60.378	8.341548	150.2975
2011	3.77	10.82614	5.307924	45.53718	60.41	8.457881	153.8625
2012	3.75	12.22424	4.230061	47.16054	57.861	8.434963	157.5
2013	3.7	8.495518	6.671335	56.17987	55.27	8.553587	157.3117
2014	3.944	8.047411	6.309719	45.60171	55.875	8.431065	158.5526
2015	4.221	9.009435	2.652693	46.75753	56.478	8.514964	192.4403
2016	4.509	15.69681	-1.61687	41.97955	57.079	8.675659	253.492
2017	4.729	16.50227	0.805887	47.20273	57.679	8.772873	305.7901
2018	4.963	12.09511	1.922757	47.48032	58.275	8.963639	306.0837
2019	5.206	11.39642	2.208429	47.53362	58.87	9.18139	306.921
2020	5.999	13.24602	-1.79425	46.19075	58.311	9.226663	358.8108
2021	5.936	16.95285	3.647187	46.07739	58.35	8.987402	401.152
2022	5.761	18.84718	3.251681	46.89696	58.867	9.039582	425.9791

Source: World Bank