Journal of Economic Studies (JES)
Department of Economics,
Nnamdi Azikiwe University, Awka,
Anambra State, Nigeria.

Web: www.nauecojournals.com *ISSN 1119-2259*

LABOUR EMIGRATION AND THE NIGERIAN LABOUR MARKET

Chinaza Jane Jideobi. Email; chinazajideobi@gmail.com
Amaka G. Metu Email; ag.metu@unizik.edu.ng
Uju Victoria Okoli. Email; uv.okoli@unizik.edu.ng

Abstract

Labour migration plays a crucial role in shaping labour market dynamics and productivity, particularly in developing economies. This study is grounded in the neo-classical labour market theory and it examines the impact of labour emigration on labour market conditions in Nigeria from 1990 to 2022. Specifically, it investigates the effects of labour emigration on unemployment, income inequality, and labour force participation. Employing the non-linear autoregressive distributed lag (NARDL) estimation technique, three models were specified to address each research objective. The findings reveal a mixed asymmetric relationship between labour emigration, proxied by net migration, and unemployment in Nigeria. While increased labour emigration is associated with higher unemployment in the short run, it contributes to a reduction in unemployment over the long run. Regarding income inequality, the results indicate that labour emigration exerts a significant long-run inverse asymmetric effect, with no notable short-run impact. Additionally, labour emigration is found to influence labour force participation asymmetrically, exhibiting a mixed effect in the long run and an inverse asymmetric effect in the short run. These findings highlight the complex interactions between labour emigration and key labour market indicators. In light of the results, this study recommends that policymakers should implement targeted policies to enhance wage levels and improve working conditions. Strengthening labour market policies may help mitigate adverse short-term effects and promote labour retention, ensuring a more stable and equitable labour market in Nigeria.

Keywords: Labour migration, labour market, unemployment, income inequality, labour participation, nonlinear autoregressive distributed lag.
JEL Classification Codes: J61, J64, J31, J22.

1.0 Introduction

The labour market is a vital component of any economy, directly influencing employment conditions, income distribution, and overall labour participation. In Nigeria, the labour market has undergone significant structural transformations, particularly since the introduction of the Structural Adjustment Program (SAP) in 1986. This program marked a shift from a more conservative, state-controlled labour system to a liberalized framework aimed at enhancing competitiveness and efficiency (Ikeije,

2020; Ikeije et al., 2016). As a result, employment patterns shifted notably, with increased participation in the service sector relative to manufacturing. Over the years, the Nigerian government and various stakeholders have introduced Initiatives such as the N-Power program, vocational training through the National Directorate of Employment, support for startups via the Bank of Industry, and agricultural schemes like the Anchor Borrowers' Program and Growth Enhancement Support Scheme have collectively aimed to improve labour productivity, reduce youth unemployment, and promote equitable income distribution (Asaleye et al., 2022; Shuaibu et al., 2021). Despite these reforms, the Nigerian labour market continues to grapple with persistent challenges such as high unemployment, underemployment, stagnant real wages, and widening income inequality (Onyeonoru, 2008; Okafor, 2011; Shuaibu et al., 2021). These enduring issues underscore the complexity of labour market dynamics in Nigeria and the need for a deeper understanding of the factors influencing them.

Labour emigration has become an increasingly significant factor affecting Nigeria's labour market. Defined as the movement of individuals from their home country in search of better opportunities abroad (Obani & Odalonu, 2023). Labour emigration alters the supply and demand balance within the domestic labour market. Nigeria, Africa's most populous country with a high annual population growth rate of 2.42%, has witnessed a substantial rise in labour emigrants from 465,932 in 1990 to over 1.4 million by 2019, with recent data indicating that nearly 3.7 million Nigerians left between 2022 and 2023 (International Organization for Migration (IOM), 2016; United Nations Department of Economic and Social Affairs (UNDESA), 2020; THIS DAY newspaper via Nigeria Immigration Service (NIS), Migration Information Data Analysis System (MIDAS). This trend reflects the country's prominent position as a leading source of emigrants on the continent, driven largely by economic challenges and the pursuit of improved employment prospects. Notably, many emigrants are highly skilled professionals such as doctors, lecturers, and students who often settle permanently in destination countries (Olarinde, 2014; Obani & Odalonu, 2023). The increasing issuance of passports, which rose by 38% between 2020 and 2021 (Dakuku, 2022), further signals the potential for continued labour emigration. This phenomenon also has critical implications for Nigeria's labour market structure, as the loss of skilled workers may exacerbate skill shortages in key sectors, thereby influencing both

productivity and wage dynamics domestically (Ozulumba et al., 2024).

While labour emigration is often expected to alleviate domestic unemployment pressures, raise wages, and increase remittances, the Nigerian labour market continues to experience high unemployment and underemployment rates, persistent poverty, and growing income inequality, with wages remaining largely inadequate for many workers (Shuaibu et al., 2021). Additionally, the Nigerian Bureau of Statistics plays a critical role in providing labour market data to inform policy decisions. Despite these efforts, significant obstacles remain in achieving sustainable improvements in labour market outcomes, partly because the broader, asymmetric impacts of labour emigration on these outcomes have not been adequately examined within the Nigerian context.

This study, therefore grounded in the Neo-classical labour market theory, addresses the significant gap in understanding how labour emigration shapes labour market outcomes in Nigeria. It was discovered that existing research has largely overlooked the broader, asymmetric impacts of emigration on unemployment, income inequality and labour participation especially within Nigeria's unique context. This work employs a non-linear analytical methodology to capture the complex and asymmetric effects of labour emigration on unemployment, income inequality, and labour force participation, providing a more comprehensive and nuanced empirical analysis. The findings of this study would not only contribute to the academic discourse on migration and labour economics but would also offer policy-relevant insights for managing labour market outcomes in Nigeria.

2.0 Literature Review

2.1 Theoretical Framework

The study's theoretical framework is based on Neoclassical Labour Market theory, which explains that labour market conditions are determined by the interaction of labour demand and supply, which means, changes in factors like labour emigration, affecting either demand or supply, can influence labour market outcomes**.** This study, in particular, employs a version of Kahnee et al.'s (2010) neoclassical labour market theory linking migration with labour market conditions, modified by Pryymachenko (2011) to account for the impact of emigration on the labour market in source countries. The basic Pryymachenko model posits a vertical labour supply curve in which salary adjustments have no effect on labour supply. Olubiyi (2020) did, however, loosen the assumption of full employment

in the Pryymachenko (2011) model. As a result, labour supply responds to wage changes, assuming that the labour supply curve is upward sloping. Thus, the model appears to be a modified version of the Pryymachenko framework. This is crucial to reflect the fact that unemployment exists in the markets, and that an increase in demand for labour leads to an increase in wages, but not as much as if it was vertically sloping downwards.

It is crucial to note that the neoclassical labour market theory in general shares similar criticism with this version of the neoclassical labour market theory linking migration with emigrants' labour market by Pryymachenko (2011). Nevertheless, this theory remains a centerpiece as its principles offer profound insights into the role labour emigration plays in affecting labour market conditions which align with the objectives of our study.

2.2 Empirical Literature

For a comprehensive insight into the labour emigration's effect on Nigeria's labour market in Nigeria from 1990-2022, this study thematically discussed some empirical literature as follows;

Labour emigration on unemployment

Ezeabasili (2023) analyzed the relationship between cross-border migration and unemployment in Nigeria and Benin Republic from 1999 to 2020, using descriptive statistics and Pearson correlation for unemployment and migration data. Results showed a significant negative relationship Ogunbiyi between cross-border migration and unemployment in Nigeria, but a negative, insignificant one in Benin. Similar study by Ogu (2022) analyzed how international migration influenced unemployment and poverty in Nigeria from 1985 to 2020 using the ARDL model. Unemployment rate and poverty index were the dependent variables, while remittances, globalization index, and adult literacy rate were the independent variables. The study found that migration proxies, including remittances, globalization, and literacy, significantly increased unemployment. In contrast, remittances and literacy reduced poverty, whereas globalization had a positive but insignificant effect on poverty. Škuflić and Vučković (2018) studied the short-term effect of emigration on unemployment rates in the case of nine European Union emigrant countries (Bulgaria; Estonia; Greece; Croatia; Latvia; Lithuania; Poland; Portugal; Romania) from 2004 to 2015. The panel data analysis (fixed-effects model) used variables such as unemployment, gross domestic product per capita and labour market policies and results showed that emigration increases the unemployment rate in emigrant countries.

Labour emigration and wage levels\ income inequalities.

Oyegoke (2023) explored the relationship between labour emigration and income inequality in Nigeria from 1980 to 2021 using variables like the Gini coefficient, net migration rate, remittances, inflation, tertiary enrollment, and GDP per capita. Correlation and OLS analyses showed a very weak positive correlation and an insignificant positive effect of labour emigration on income inequality. In the same view, Mandal and Prasad (2022) studied the impact of skilled labour emigration on wage inequality in the presence of trade reforms, capital inflow and bureaucratic reform. Using a specific-factor general equilibrium model with a small economy featuring two sectors and three production factors: skilled labour, unskilled labour, and capital. The findings showed that skilled labour emigration reduces wage inequality, depending on factor intensity assumptions. The combined effect of skilled emigration and trade reform on wage inequality varies with the magnitude of changes and factor intensity. Olubiyi and Olarinde (2015) examined the relationship between emigration and Nigeria's labour market from 1980 to 2016 using a modified neoclassical labour market theory and the generalized method of moments (GMM). They analyzed three models with wage and unemployment as dependent variables representing the labour market, and economic growth, inflation, income differential, remittances, population, human capital, migration, and government spending as independent variables. High-skill emigration is driven by economic size, income differences, and remittances; low-skill emigration by income differentials and population. High-skill emigration increases employment and wages for all, while low-skill emigration affects employment more than wages. High-skill emigration widens income gaps, and wages in both groups adjust slowly to inflation.

Labour emigration and labour participation

Iordache and Titan (2022) examined Romanian emigration's impact on the labor force from 2000 to 2020 using Pearson correlation analysis. They focused on emigration, unemployment, job vacancies, and household monthly income. Findings reveal a strong negative correlation between unemployment and emigration, indicating that free movement reduced unemployment pressure. However, recent emigration negatively affected job demand, with notable demographic impacts. The correlation between emigrants and job vacancies was insignificant, but emigration correlated closely with average household

income. Monisola et al. (2021) conducted a similar analysis, looking at the relationship between international migration and labour market participation rates in Sub-Saharan Africa from 1990 to 2018. The study used the system Generalised Method of Moment to analyse panel data from 46 SSA nations, examining variables such as net migration, international migrant stock (total), net remittances, labour force participation rate (total), and other control variables. The findings demonstrated that net migration in the receiving countries has a substantial positive link with labour force participation rate, whereas the number of international migrants in the countries of origin has a significant negative relationship. The findings also found that net remittance inflows have a substantial negative association with the labour force participation rate in the countries of origin. Lenoel and David (2019) also investigated the impact of emigration and remittances on female labour force participation in Morocco, employing a mixed-methods approach that used qualitative and quantitative techniques. The survey contains modules on household members' sociodemographic traits, employment status, expenditures, migration, remittances, and income sources. The work market questions were limited to the status and type of labour, as well as remuneration. The conventional least squares and two-staged least squares techniques were employed to conduct the analysis. The study discovered that having a migrant among the former members of the home improves female labour force involvement, however remittances have a negative influence. Furthermore, migration increases a woman's likelihood of becoming an unpaid family worker, suggesting the need to compensate for a drop in labour supply, while having no substantial impact on the likelihood of women engaging in income-generating activities. This study differs in terms of geography and approach, as it focuses on Nigeria and employs the non-linear autoregressive distributed lag method.

This study addressed key gaps by focusing specifically on Nigeria's unique labour market dynamics, unlike previous studies which focused on other countries or cross-country panels. It employed the non-linear autoregressive distributed lag (NARDL) technique to capture asymmetric effects of labour emigration on unemployment, income inequality and labour force participation. By examining multiple labour market indicators and considering Nigeria's specific issues the study provided a more nuanced and comprehensive understanding of labour emigration's impact, filling both geographical and

methodological gaps in the existing literature.

3.0 Data and Methods

3.1 Empirical Model Specification

This section presents three macro-econometric models corresponding to each objective of this study that aid the study of the effect of labour emigration on Nigeria's labour market. The labour market was disaggregated into unemployment, wage level and labour participation rate as our dependent variables while bringing in other explanatory variables.

Objective 1: To investigate the effect of labour emigration on unemployment in Nigeria.

Functional form:

$$E = f(MIG, W, GDP, INF) \quad 3.1$$

This is functionally restated as:

$$UNEMP = f(LE, GDP, INF, REM, POP, HC) \quad 3.2$$

Where UNEMP = Unemployment, LE = Labour Emigration, REM= Remittances, GDP= Gross domestic product, INF = Inflation, POP = Population and HC = Human capital.

Mathematical form:

$$UNEMP = LE + GDP + INF + REM + POP + HC \quad 3.3$$

Econometric form:

$$UNEMP_t = \beta_0 + \beta_{11}LE_t + \beta_{12}GDP_t + \beta_{13}INF_t + \beta_{14}REM_t + \beta_{15}POP_t + \beta_{16}HC_t + \mu_t \quad 3.4$$

Where β_0 is intercept or constant while $\beta_{11} - \beta_{16}$ are slopes of the coefficients. Subscript t is time series data while μ is the error term.

Objective 2: To determine the effect of labour emigration on income inequality in Nigeria.

Functional form:

$$W = f(MIG, E, GDP, INF, HC) \quad 3.5$$

However, wage levels are represented by income inequality is a broader concept and there may be information on other forms of income apart from wages such as salaries and transferred incomes that are also recorded. Hence, the functionally restated as:

$$IN = f(LE, GDP, INF, HC, REM) \quad 3.6$$

Where IN = Income inequality, LE = Labour Emigration, GDP = Gross domestic product, INF = Inflation, HC = Human capital and REM= Remittances.

Mathematical form:

$$IN = LE + GDP + INF + HC + RE \quad 3.7$$

Econometric form:

$$IN_t = \beta_0 + \beta_{21}LE_t + \beta_{22}GDP_t + \beta_{23}INF_t + \beta_{24}HC_t + \beta_{25}REM_t + \acute{\varepsilon}_t \quad 3.8$$

Where β_0 is intercept or constant $\beta_{21} - \beta_{25}$ are the slopes of the coefficients. Subscript t is time series data while έ is the error term.

Objective 3: To examine the effect of labour emigration on labour participation in Nigeria.

Functional form:

LF = f (NETMIG, INTMIG, REM, INF, POPG) 3.9

This is functionally restated as

LP = f (LE, REM, POP, HC, GDP, INF) 3.10

Where LF = Labour participation rate, LE = Labour Emigration, REM = Remittances, POP = Population, GDP = Gross domestic product, INF = Inflation and HC = Human capital.

Mathematical form:

LF = LE + REM + POP + HC + GDP + INF 3.11

Econometric form:

$LPRT_t = \beta_0 + \beta_{31}LE_t + \beta_{32}REM_t + \beta_{33}POP_t + \beta_{34}HC_t + \beta_{35}GDPt + \varphi_t$ 3.12

Where β0 is intercept or constant while $\beta_{31} - \beta_{35}$ are slopes of the coefficients. Subscript t is time series data while φ are all error terms.

3.2 Explanation of Variables

The study examined labour market outcomes focusing on unemployment, income inequality, and labour participation as dependent variables, while labour emigration served as the key independent variable. Unemployment is defined as the proportion of the labour force that is actively seeking but unable to find jobs, using ILO estimates. Income inequality, measured by the Gini coefficient, captures disparities in income distribution, highlighting wage determination aspects. Labour participation, specifically among individuals aged 15-24, reflects the proportion of the youth economically active in producing goods and services. Labour emigration refers to the movement of workers abroad seeking improved economic opportunities, expected to influence these labour market outcomes.

Control variables were incorporated to contextualize labour market conditions such as Gross Domestic Product (GDP) which measures overall economic activity, anticipated to reduce unemployment and enhance participation and wages. Remittances, financial transfers from emigrants to their home country, impact labour market conditions through household support and investment. Inflation serves as an indicator of macroeconomic stability affecting employment and wages. Population size was considered for its effect on labour supply dynamics. Human capital, proxied by school enrolment rates, represents the population's skills and knowledge, assumed to improve employment prospects, wage levels, and labour force

participation. Together, these variables frame the complex interactions shaping labour markets under the influence of labour emigration.

3.3 Techniques and Procedures of Data Analysis

The study utilizes the non-linear autoregressive distributed lag (NARDL) technique for its analysis, adopted for its ability to capture both asymmetry in long-run equilibrium relationships and short-run dynamic coefficients through partial sum decompositions of the independent variables. The NARDL framework, as a single-equation error correction model, is particularly valued for its simplicity, ease of interpretation, and its capacity to reconcile the long-run behaviour of cointegrated variables with their short-run responses, as reflected in the non-linear error correction term. This term, expected to be negative, significant at the 5% level, and between 0 and 1, indicates the speed of adjustment towards equilibrium. In the modelling process, variables such as labour emigration are decomposed into positive and negative changes to capture asymmetric effects. The models incorporate both long-run multipliers and short-run coefficients, with variables often transformed into logarithms to smooth the data and address skewness. Prior to estimation, pre-tests such as the Augmented Dickey-Fuller (ADF) and Philips-Perron (PP) unit root tests are conducted to ensure stationarity and avoid spurious regression results, given the challenges of non-stationary time series data. The F-bound NARDL co-integration test is then applied to determine the existence of long-run relationships among variables, with the acceptance of co-integration based on the F-statistic exceeding critical bounds at the 5% significance level. This approach ensures that both short-run and long-run dynamics are robustly estimated, providing a comprehensive framework for analysing the relationships among the study variables.

4.0 Presentation of Results and Discussion of Findings

4.1 Descriptive Statistics of the model

Table 4.1 presents the summary of the descriptive statistics i.e., the measures of central tendency which explains the extent of distribution of values of a variable around the mean.

The descriptive statistics was done using the raw data of the variable and not the transformed data. From Table 4.1, the mean shows the average value of the different time series variables under study and from the table above, it can be seen that the mean value of the dataset lies between the

maximum and minimum values of each of the variables.

Variables	Mean	Maximum	Minimum	Probability	Observations
UNEMP	4.041839	6.000000	0.052100	0.000000	34
GINI	42.88799	48.52857	35.10000	0.000000	34
LPRT	59.96979	60.70700	58.31100	0.042543	34
LE	329.0000	107212.0	-145917.0	0.545484	34
REM	3.299639	8.333829	0.018522	0.357478	34
GDP	7.98E+09	1.57E+10	1.01E+09	0.322601	34
POP	1.51E+08	2.19E+08	95214257	0.289706	34
HC	35.53345	54.88297	23.54534	0.263228	34
INF	18.27394	72.83550	5.388008	0.000000	34

Table 4.1: Summary of Descriptive Statistics

Source: Researchers' Computation from EViews 13.

4.2 Stationarity or Unit Root Test

The unit root test assesses whether variables are stationary, which is crucial because non-stationary data can lead to biased results and unreliable conclusions. Stationarity implies that a time series' statistical properties; mean, variance, autocorrelation, remain constant over time.

Table 4.2: Summary of the ADF Unit Root Tests

Variables	ADF Test Statistic	ADF Critical Value	PP Test Statistic	PP Critical Value	Order of Integration
UNEMP	-5.525022	-2.967767	-5.825698	-2.954021	I(1)
GINI	3.978897	-2.986225	-3.700292	-2.954021	I(0)
LPRT	-5.313420	-3.603202	-3.775216	-2.957110	I(0)
LE	-4.232196	-3.557759	-2.839749	-2.954021	I(0)
GDP	-4.578756	-2.960411	-5.069254	-2.957110	I(1)
REM	-5.770374	-2.957110	-1.738711	-2.954021	I(1)
POP	-4.914457	-2.981038	-2.124575	-3.552973	I(0)
HC	-6.436677	-2.957110	-0.964285	-2.954021	I(1)
INF	-6.178846	-2.971853	-4.633215	-2.957110	I(1)

Source: Researchers' Computation from EViews 13

The unit root test results, including both Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, are presented in Appendix 3–11, with a summary shown in Table 4.2. Both tests were conducted on the level series and the first-differenced series. The decision rule applied is to reject the null hypothesis of a unit root if the test statistic value (ADF or PP) exceeds the critical value at the chosen level of significance, in absolute terms. While the ADF and PP tests generally show consistent evidence regarding stationarity, some variables exhibit mixed orders of integration between the two tests. Given this mixed order of integration across variables as indicated by both unit root tests, this study moves forward with the F-bound test to check for co-integration.

4.3 Co-Integration Tests

This step seeks to identify if co-integrating relationships exist among the variables. This study used the F-bound test in non-linear auto-regressive distributed lag technique (NARDL) since the unit root test shows that variables are stationary at level and first difference. The results of for the three equations are presented in Appendix 12 and summarized in Table 4.3:

Table 4.3: Summary of Co-integration Tests.

MODEL 1						
Test Statistic			Value			
F-statistic			4.48236			
	10%		5%		1%	
Sample Size	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
			F-Statistic			
30	2.384	3.728	2.875	4.445	4.104	6.151
35	2.3	3.606	2.753	4.209	3.841	5.686
Asymptotic	2.03	3.13	2.32	3.5	2.96	4.26
MODEL 2						
F-statistic			11.23198			
	10%		5%		1%	
Sample Size	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
			F-Statistic			
30	2.384	3.728	2.875	4.445	4.104	6.151
35	2.3	3.606	2.753	4.209	3.841	5.686
Asymptotic	2.03	3.13	2.32	3.5	2.96	4.26
MODEL 3						
F-statistic			4.510734			
	10%		5%		1%	
Sample Size	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
			F-Statistic			
30	2.457	3.797	2.97	4.499	4.27	6.211
35	2.387	3.671	2.864	4.324	4.016	5.797

Asymptotic	2.12	3.23	2.45	3.61	3.15	4.43

Source: Researchers' Computation from EViews 13

Model 1

From table 4.3, the value of the F-statistic which 4.48236 is greater than the lower and upper bound test at 5% level of significance. This shows that there is a long run relationship between the independent variables in model 1 (labour emigration, gross domestic product, remittances, human capital, population and inflation) and dependent variable (unemployment).

Model 2

From Table 4.3, the value of the F-statistic which is 11.23198 is greater than the lower and upper bound test at a 5% level of significance. This shows that there is a long-run relationship between independent variables in model 2 (labour emigration, gross domestic product, remittances, human capital, population and inflation) and dependent variable (Income inequality).

Model 3

From Table 4.3, the value of the F-statistic which is 4.510734 is greater than the lower and upper bound test at a 5% level of significance. This shows that there is a long-run relationship between independent variables in model 3 (labour emigration, gross domestic product, remittances, human capital and population) and dependent variable (labour participation rate).

Given the results generated, we can then infer that there exists a non-linear co-integrating relationship in the three models used in this study.

Model Estimation/Evaluation

Panel A: Long Run Estimates

Since we have established that there is a long-run relationship amongst the variables in this study, the NARDL model long-run form would be used to determine the coefficients of the three regression models. The result is presented in Appendix 13 and summarized in Table 4.4:

MODEL 1

Table 4.4 shows the estimated non-linear long-run coefficients of labour emigration on unemployment, with values of -0.0000227 and -0.000044 for increasing and decreasing levels of labour emigration in the long run. This implies that on average, an increase in labour emigration would lead to a 0.00227% decrease in unemployment, while a decrease in labour emigration leads to a 0.0044% decrease in unemployment in Nigeria in the long run. Thus, increasing labour emigration exerts an inverse effect on unemployment, while decreasing labour emigration exerts a direct effect.

These findings are consistent with Ezeabasili (2023), who found a significant negative relationship between cross-border migration and unemployment in Nigeria, reinforcing the idea that labour emigration can reduce unemployment. However, they diverge somewhat from Ogu (2022), who reported that migration proxies, including remittances and globalization, significantly increased unemployment; this difference may be due to differing methodologies and variable selections.

Regarding the control variables, gross domestic product (LNGDP) and human capital exhibit positive effects on unemployment, with coefficients of 1.37 and 0.204 respectively. This indicates that a 1% increase in GDP or human capital corresponds to an increase in unemployment by 1.37% and 0.204% respectively, which does not conform to typical economic expectations. Conversely, remittances, inflation, and population show negative effects on unemployment, with coefficients of -0.528, -0.082, and -23.15 respectively. Thus, increases in remittances, inflation, and population reduce unemployment on average.

The negative effect of remittances on unemployment aligns with findings in prior analyses emphasizing remittances as a source of income and economic stabilization that can reduce unemployment pressures. However, the positive relationship between GDP and unemployment contrasts with conventional economic theory and some studies, warranting further exploration. The large negative coefficient on population contrasts with theoretical expectations and empirical findings, such as those linking population growth with increased labour supply and potential unemployment.

Table 4.4: Summary of NARDL Long run Tests.

MODEL 1				
Variable *	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
@CUMDP(LE(-1))	-2.27E-05	1.39E-05	-1.632	0.115734
@CUMDN(LE(-1))	-4.40E-05	2.06E-05	-2.13529	0.043146
LNGDP(-1)	1.3725	4.2406	0.3237	0.7490
LNPOP(-1)	-23.1546	22.5231	-1.0280	0.3142
REM(-1)	-0.5284	0.2776	-1.9036	0.0690
HC(-1)	0.2036	0.1519	1.3404	0.1927
INF(-1)	-0.0828	0.0630	-1.3142	0.2012
MODEL 2				
@CUMDP(LE)	-7.92E-06	5.61E-06	-1.41296	0.169999
@CUMDN(LE)	5.45E-06	6.24E-06	0.872946	0.391
LNGDP(-1)	-17.1278	4.6756	-3.6632	0.0012
REM	-0.0123	0.1214	-0.1010	0.9204
HC	-0.0305	0.0738	-0.4139	0.6824

INF(-1)	0.0661	0.0396	1.6714	0.1071
LNPOP(-1)	53.7287	15.4593	3.4755	0.0019
MODEL 3				
@CUMDP (LE (-1))	-6.00E-06	1.81E-06	-3.31974	0.002767
@CUMDN (LE (-1))	-2.44E-06	2.06E-06	-1.18316	0.247874
LNGDP	0.6712	0.2297	2.9220	0.0073
LNPOP	-3.3520	1.2230	-2.7409	0.0111
REM	0.0085	0.0193	0.4382	0.6650
HC(-1)	0.0304	0.0094	3.2252	0.0035

Source: Researchers' Computation from EViews 13

MODEL 2

Table 4.4 also presents the non-linear long-run coefficients of labour emigration on income inequality, showing -0.0000079 and 0.0000054 for increasing and decreasing labour emigration respectively. This implies that increasing labour emigration causes about a 0.0008% decrease in income inequality, while decreasing emigration leads to a 0.0005% increase, indicating that labour emigration generally has an inverse effect on income inequality in the long run.

These results are consistent with Oyegoke (2023), who found a weak positive correlation and insignificant positive effect of labour emigration on income inequality, suggesting minimal adverse impacts. Similarly, Mandal and Prasad (2022) suggest skilled labour emigration can reduce income inequality depending on conditions, supporting the notion of a complex relationship.

Control variables show that gross domestic product (LNGDP), remittances, and human capital have negative effects on income inequality with coefficients of -17.127, -0.0123, and -0.0305 respectively. This indicates that increases in these variables reduce income inequality, consistent with theoretical expectations and previous findings that economic growth, remittances, and investment in human capital help narrow income disparities.

Conversely, inflation and population exert positive effects on income inequality with coefficients of 0.066 and 53.728 respectively, meaning increases in inflation and population heighten income inequality. This is in line with economic theory and empirical evidence, where inflation can erode purchasing power unevenly, and population growth may exacerbate inequality.

MODEL 3

Table 4.4 presents the estimated non-linear long-run coefficients of labour emigration on labour participation rate, with values of -0.0000060 and -0.0000024 for increasing and decreasing levels of labour emigration

respectively. This implies that, on average, an increase in labour emigration would lead to a 0.0006% decrease in labour participation rate, while a decrease in labour emigration leads to a 0.0002% decrease in labour participation rate in Nigeria in the long run. Thus, increasing labour emigration exerts an inverse effect on labour participation rate, whereas decreasing labour emigration exerts a positive effect.

These findings align with studies such as Lenoel and David (2019), who found that having migrants in the household can increase female labour force participation, although remittances may negatively impact participation. Similarly, Monisola et al. (2021) documented that net migration negatively relates to labour force participation in origin countries, consistent with the inverse effect of labour emigration observed here. The results highlight the nuanced dynamics where increased emigration may reduce the active labour participation domestically due to labour outflow.

Regarding control variables, gross domestic product (LNGDP), remittances, and human capital positively influence labour participation rate in the long run, with coefficients of 0.6712, 0.0085, and 0.0304 respectively. This indicates that a 1% increase in these variables raises labour participation by 0.6712%, 0.0085%, and 0.0304%, respectively. Conversely, population growth exerts a negative effect on labour participation rate, reducing it by 3.52% on average. Upon examination of the results on control variables effect on labour participation rate, it is evident that they all conform to theoretical expectation.

Table 4.5: Short Run Estimate Results Summary (Unemployment)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	365.7226	46.87017	7.802885	5.12E-07
@DCUMDP(LE)	5.10E-06	6.42E-06	0.795007	0.437569
@DCUMDN(LE)	-1.33E-05	4.43E-06	-2.99103	0.00821
@DCUMDP(LE(-1))	5.84E-07	5.14E-06	0.113681	0.910823
@DCUMDN(LE(-1))	5.08E-05	5.27E-06	9.64584	2.62E-08
D(LNGDP)	3.139094	1.058692	2.965067	0.008677
D(LNGDP(-1))	5.812934	1.0388	5.595815	3.21E-05
D(LNPOP)	28.93662	8.680101	3.333673	0.003933
D(REM)	-0.3342	0.088419	-3.77971	0.001495
D(REM(-1))	0.306354	0.08592	3.565568	0.00238
D(HC)	0.035172	0.040492	0.868621	0.397152
D(INF)	-0.08847	0.014808	-5.9742	1.51E-05
D(INF(-1))	0.052965	0.010732	4.93509	0.000126

COINTEQ*	-0.92675	0.118697	-7.80769	5.08E-07
R-squared	0.908808			
Adjusted R-squared	0.839074			
S.E. of regression	0.582436			
Sum squared resid	5.766944			
Log likelihood	-17.9185			
F-statistic	13.03236			
Prob(F-statistic)	2.30E-06			

Source: Researchers' Computation from EViews 13

The initial observation from Table 4.5 indicates a positive intercept (C = 365.7226) in the regression line. This signifies that in a scenario where all variables remain constant or at zero, the unemployment rate in Nigeria would increase by 365.72% annually. This aligns with the theoretical expectation, considering the prior anticipation that the intercept could manifest as either positive or negative.

Upon examining the regression result in Table 4.5, it is evident that increasing labour emigration and its first lag value exert a direct influence on unemployment in the short run. This implies with an increasing labour emigration in past and current period, Nigeria unemployment still increases by 0.0005% and 0.0006% on average. However, decreasing labour emigration and its first lag exert mixed influence on unemployment in Nigeria. This indicates that with decreasing labour emigration in the past and current period, unemployment first increases by 0.0013% before reduce by 0.0051% on average.

Looking at the control variables in the study, gross domestic product and its lag value has a positive effect on unemployment in the short run- that is, increased unemployment by 5.81% in the past and to 3.139% increase in the current period on average. Human capital proxied by gross school enrolment and population also have positive impact on unemployment. This indicated by the 0.0352% and 28.94% increase in unemployment due to 1% increase in human capital and population respectively.

On the other hand, remittance had a negative impact on unemployment rate while its first lag value has a positive impact on unemployment. This indicates that while values of remittance in past increases unemployment by 0.033%, in this current period remittances reduce unemployment by 0.306% on average. Inflation also follows a similar pattern. This is because past values of inflation increase

unemployment by 0.053% but in this current period it reduces unemployment by 0.088% on average. Finally, the coefficient of the error correction term is -0.9268, suggesting that the speed of adjustment from the short run back to the long run if there is disequilibrium in the model is 92.68%

MODEL 2

Table 4.6: Short Run Estimate Results Summary (Income Inequality)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	447.9309	39.85059	11.24026	4.78E-11
D(GINI(-1))	-2.71566	0.25516	-10.643	1.44E-10
D(LNGDP)	0.566399	0.9756	0.580565	0.566946
D(LNGDP(-1))	-10.711	1.056959	-10.1338	3.79E-10
D(INF)	0.026681	0.01042	2.560592	0.017163
D(INF(-1))	-0.02435	0.010911	-2.23205	0.035207
D(LNPOP)	61.39765	23.26852	2.638657	0.014387
COINTEQ*	0.77981	0.069236	11.26301	4.59E-11
R-squared	0.927758			
Adjusted R-squared	0.906688			
S.E. of regression	0.561537			
Sum squared resid	7.567768			
Log likelihood	-22.3366			
F-statistic	44.03122			
Prob(F-statistic)	3.58E-12			

Source: Researchers' Computation from EViews 13

The initial observation from Table 4.6 indicates a positive intercept (C = 447.9309) in the regression line. This signifies that in a scenario where all variables remain constant or at zero, the income inequality in Nigeria would increase by 447.931% annually. This aligns with the theoretical expectation, considering the prior anticipation that the intercept could manifest as either positive or negative.

Up next is the one-lag value of income inequality which indicates a negative effect on the current values of income inequality, reducing it by 2.72% on average. Gross domestic product has a positive impact on unemployment rate while its first lag value has a negative impact on income inequality.

This indicates that while increasing gross domestic product in past decreases income inequality by 10.71%, in this current period gross domestic product increases income inequality by 0.566% on average. Similarly, the past values of inflation reduced income inequality by 0.024% but in this current period increasing inflation increases income inequality by 0.027% on average.

Furthermore, population is seen to exert a positive impact on income inequality in the short run by increasing income inequality by 61.4%. The error correction term with a co-efficient of 0.77981 indicates that in the case of any disequilibrium from the long run, the speed of adjustment is 77.98%.

MODEL 3

Table 4.7: Short Run Estimate Results Summary (Labour Participation Rate)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	94.37161	14.33007	6.585563	1.27E-06
D(LPRT(-1))	0.847056	0.142161	5.958409	5.37E-06
@DCUMDP(LE)	-5.51E-06	7.83E-07	-7.03727	4.63E-07
@DCUMDN(LE)	1.41E-06	7.37E-07	1.91433	0.068674
@DCUMDP(LE(-1))	4.79E-06	7.59E-07	6.310103	2.38E-06
@DCUMDN(LE(-1))	3.14E-07	7.09E-07	0.443585	0.661675
D(HC)	0.024979	0.006724	3.714726	0.001206
D(HC(-1))	0.017466	0.005666	3.082682	0.005441
COINTEQ*	-0.88059	0.133645	-6.58907	1.26E-06
R-squared	0.799381			
Adjusted R-squared	0.726428			
S.E. of regression	0.087116			
Sum squared resid	0.166961			
Log likelihood	36.9846			
F-statistic	10.95755			
Prob(F-statistic)	4.20E-06			

Source: Researchers' Computation from EViews 13

From Table 4.7, the regression line indicates a positive intercept (C = 94.37). This signifies that in a scenario where all variables remain constant or at zero, labour participation rate in Nigeria would increase by 94.37% annually. This aligns with the theoretical expectation, considering the prior anticipation that the intercept could manifest as either positive or negative.

Considering the core independent variable of this study which is labour emigration proxied by net migration, its asymmetric impact on labour participation rate as

shown in Table 4.8 include that; an increase in labour emigration and its first lag value exerts a mixed influence on labour participation rate in the short run. This implies while an increase in labour emigration in first lag increases labour participation rate by 0.0004%, its current value reduces labour participation rate by 0.0006% on average. However, decreasing labour emigration and its first lag exert direct influence on labour participation rate in Nigeria. This indicates a decrease in labour emigration and its lag value reduces labour participation rate by 0.0001% and 0.00003% respectively on average.

Moreso, human capital proxied by gross school enrolment indicates a positive influence on labour participation rate. Such that an increase in human capital and its first lag value increases labour participation rate by 0.025% and 0.017% respectively on average. The error correction term with a co-efficient of 0.88059 indicates that in the case of any disequilibrium from the long run, the speed of adjustment is 88.06%.

5.0 Conclusion and Policy Recommendations

This study findings on labour emigration and labour market outcomes in Nigeria have clear policy implications. Specifically, policymakers should recognize that labour emigration affects unemployment, income inequality, and labour participation asymmetrically, with distinct short- and long-run effects. To address unemployment, short-run policies should focus on cushioning the immediate rise in unemployment following increased emigration through job programs and vocational retraining initiatives, while long-run strategies should leverage emigration to reduce unemployment by fostering skill development and entrepreneurship. For income inequality, policies must emphasize inclusive GDP growth by investing in rural infrastructure, social protection, and support for SMEs, human capital investment, and inflation/population management to mitigate disparities. Regarding labour participation, policies should focus on retaining youth and skilled workers through incentives, tax breaks, and improved labour conditions. Expansion of lifelong learning and vocational programs is essential to increase employability.

The recommendations collectively underscore the importance of coordinated and adaptable policy frameworks that comprehensively address the multifaceted impacts of labour emigration on unemployment, income inequality, and labour participation. Such policies are essential to foster sustainable, inclusive labour market outcomes in Nigeria

effectively balancing short-term challenges with long-term development objectives.

References

Dakuku, P. (2022). Exodus of the next generation; Time for real concern, *Premium Times*. Accessed February 12, 2024.

Ezeabasili, I. E. (2023). Cross border migration and unemployment in Nigeria and Benin Republic, 1999-2020. *International Journal of Poverty, Investment and Development*, *3*(1), 12-23.

Ikeije, U. U. (2020). Labour market restructuring and the nature of employment relations in Nigeria. *Journal of Technology Management and Business*, *7*(2), 83-90.

Ikeije, U. U., Akomolafe, L., & Onuba, C. O. (2016). Labour Practices in the informal sector of the Nigerian economy: A critical analysis. *Global Journal of Arts, Humanities and Social Sciences*, 6-25.

Lenoel, A., & David, A. (2019). Leaving work behind? The impact of emigration on female labour force participation in Morocco. *International Migration Review*, *53*(1), 122-153.

Iordache, M., & Titan, E. (2022). Does Romanian emigration influence the labour force? *Journal of Economics, Finance and Management Studies*, *5*, 2644-0504.

Iskakova, D., Kurmanalina, A., Iskakova, D., Serikbayeva, S., & Ibrasheva, A. (2023). Migration impact on the labour market and economic activity of Kazakhstan. *Eurasian Journal of Economic and Business Studies*, *67*(3), 149-162.

Mandal, B., & Prasad, A. S. (2022). Emigration, economic reform and wage distribution in a small economy. In internal migration within South Asia*: Contemporary Issues and Challenges* (pp. 239-256). Singapore: Springer Nature Singapore.

Ozulumba, I. J., Metu, A. G., & Nzeribe, G. (2024). An evaluation of the impact of migration on human capital development: Evidence from the ECOWAS. International Journal of Recent Innovation in Social Sciences, 8(7), 1086–1095.

Monisola, A. O., Kadijat, A. O., Olusola, O. Y. E. L. E. K. E., Aina, O. O., & Samuel, O. O. (2021). International Migration and Labour Force Participation Rate: Evidence from Sub-Saharan Africa. *Redeemer's University Journal of Management and Social Sciences*, *4*(1), 1-15.

Obani, E. F., & Odalonu, B. H. (2023). Impact of rising migration on socio-economic development of Nigeria (2015-2022). *African Journal of Humanities and Contemporary Education Research*, *10*(1), 39-56.

Ogu, C. (2022). Examining the relationships among effect of international migration, unemployment and poverty in Nigeria. *African Journal of Social and Behavioural Sciences*, *12*(2), 135-150.

Olarinde, O. (2014). Migration, human capital formation and economic growth in Nigeria (Doctoral dissertation).

Olubiyi, E. A., & Olarinde, O. S. (2015, November). *Emigration and labour market dynamics in Nigeria*. Paper presented at the 7th African Population Conference on Demographic Dividends in Africa: Prospects, Challenges and Opportunities, Johannesburg, South Africa. Union for African Population Studies

Olubiyi, E. (2020). Labor Market Effects of Emigration in Nigeria: Skill-Level Analysis. *Iranian Economic Review*, (Articles in Press).

Onyeonoru, I.P. (2008). Labour market in the context of economics sociology: Bringing society back to the economy. *Journal Social Sciences* 6(1): 55-67

Oyegoke, E. O. (2023). Labour emigration and income inequality effects on sending countries: Evidence from Nigeria. *Journal of Global Economics and Business*, *4*(14), 76-94.

Oyegoke, E. O., & Amali, E. (2022). Labour emigration, remittances and economic development: An empirical analysis. *African Journal of Social Issues*, *5*(1), 239–259. https://doi.org/10.4314/ajosi.v5i1.16

Pryymachenko, Y., Fregert, K., & Andersson, F. N. G. (2013). The effect of emigration on unemployment: Evidence from the Central and Eastern European EU member states. *Economics Bulletin*, Vol33 No. (4), 2692–2697.

Serena, P. C. (2017). Labour market– concepts, functions, features, patterns. Romania: Faculty of Economics and Business Administration.

Shuaibu, M., Abdullahi, S. I., Yusuf, M. M., & Yusufu, M. (2021). Economic growth and labour market dynamics in Nigeria: Further evidence from ardl bound testing. *Sumerianz Journal of Economics and Finance*, *4*(1), 35-40.

Škuflić, L., & Vučković, V. (2018). The effect of emigration on unemployment rates: The case of EU emigrant countries. *Economic research-Ekonomska istraživanja*, *31*(1), 1826- 1836.