

Trade Openness, Industrial Development and Employment Generation in Nigeria

DOI: 10.36108/ljerhrm/6202.60.0160

Amamizo Hezekiah OGUNNUBI¹

E-mail: ha.ogunnubi@acu.edu.ng

Tel.: +2348155929937

ORCID: <https://orcid.org/0009-0001-4296-0216>

Sunday Sesan ABERE²

^{1 & 2}Department of Economics, Ajayi Crowther University, Oyo, Oyo State, Nigeria

E-mail: ss.abere@acu.edu.ng or sundayoluwasesan1@gmail.com

Tel.: +2347038205903

ORCID: <https://orcid.org/0000-0003-0863-4529>

Abstract

This paper examined the effects of trade openness and industrial output on employment creation in Nigeria between 1981 and 2022. The challenge of employment creation is one of the key macroeconomic issues in Nigeria even as more integration into the global economy and industrial reforms goes on. Current literature focuses mainly on either trade or industrialization, thus failing to capture how the two could simultaneously impact labour markets. This paper filled this gap by exploring the individual and combined effects of trade openness and industrial output on the employment. The research used the Autoregressive Distributed Lag (ARDL) modelling method, which was appropriate under mixed order of integration, and secondary data, which was obtained in the Central Bank of Nigeria and the World Development Indicators. The results indicated the presence of an equilibrium relationship of the variables in the long-run. Trade openness empirically had positive and statistically significant influence on both long and short-term employment. Industrial production has a positive impact on employment in the short-term but has no significance in the long-term. Exchange rate showed both negative and positive impacts, foreign direct investment and GDP per capita have positive impacts on employment, especially in the long-run. This paper concluded that trade openness is an effective way of creating jobs but only under a strong local industrial capacity. It proposed policies which encourages export-oriented industrialization, strengthen local industries, and macroeconomic stability. The research is valuable to the body of knowledge by offering empirical data on the combined effect of trade and industrial output in determining the outcome of employment in Nigeria.

Keywords: Trade openness, Industrial output, Employment generation, Labour market dynamics, Economic integration

Introduction

Employment is a very important economic performance indicator that guides the countries towards recovery and helps industries get productive by integrating talents (Pologeorgis, 2023). However, in spite of its unquestionable significance, the governments of different countries of the world have experienced a hard time to deliver on the promise of creating jobs, and the number of unemployed people is still in millions. Russia, North Korea, Italy, Romania, Nigeria, Ghana, Egypt, Turkey, and Lebanon among others, still grapple with the increasing unemployment rate. The international

labour organization (ILO) reported that the world has a rate of unemployment of 4.9% in 2024 which is a slight improvement on the 5% in 2023. Nevertheless, unemployment rates during the pandemic period peaked at 235.21 million in 2020 and dropped to the current 205.25 million in 2022 (O'Neill, 2024).

Nigeria is one of the African countries that have not been spared by these challenges. Most of the economic policies on the continent favor the rich elite, and those who are mostly affected by the hardships of the economy end up at the receiving end. Unemployment crisis has also been aggravated in Nigeria over the years, and the efforts by the government have not been effective (Eguatu, 2021). The effects of this failure have been extensive because it has led to a rise in poverty, violence and terrorism and the level of migration in pursuit of better opportunities has increased (Ohiare, 2021). Unemployment does not only destabilize the economic condition of households but makes it difficult to several families to afford school fees, utility bills, and other fundamental needs, it negatively impacts social disparities and economic development (Emmanuel et al., 2023).

To make the matters worse, the performance of the indigenous industries in Nigeria has deteriorated for several years and this has brought about restrictive hiring and age restrictions that have locked out the big sections of the population out of jobs. In other instances, industries employed foreigners at the expense of local talent and this weakened the creation of job opportunities in the country. In the past, the industrial sector played a key role in the Nigerian economy by contributing up to 39% and 37% to the GDP in the 1970s and 1980s respectively (Yahaya 2026). Nevertheless, this portion has fallen to 28% in the last few years (Effiong, 2022), worsened by the policies like the interest rate set by the Central Bank of Nigeria at 26%, which compelled most businesses to reduce their staff (Osagioduwa et al, 2022)

International trade has been a paradoxical cause of unemployment crisis in Nigeria. Although it provides a global market, the local industries have been weakened by preference to foreign goods, thus resulting in layoffs and closure of factories (Abdulrazaq & Lambe 2024). This reliance on imported products has made most of the local industries incapable of competing and the laid off employees turn to crime and other forms of vices as a survival mechanism. International trade and a variety of local industries have not allowed Nigeria to reach the objective of full employment. The interdependency between international trade and local industries in Nigeria has enormous potential to revolutionise the labour market (Ogu et al 2026). However, a significant portion of the current literature considers these factors separately, overlooking the multidimensional nature of their impact in the creation of employment. With the already struggling Nigerian industries to compete in the global markets, and the growing preference of the consumers to foreign goods, the unemployment crisis worsens (Ahmed, 2025; Azeez & Genty, 2018). In the absence of proper knowledge of the interaction between international trade and local industries, policy makers are left with nothing to do but to find it hard to offer viable solutions without the ability to design policies that can exploit the synergy between the two forces towards sustainable job creation.

This inadequate awareness was a setback to the advancement of Nigeria to balance global trade interests and development of the economy in Nigeria. It was important to tackle this problem to restore local industries, curb unemployment, and make international trade an engine rather than a drag to economic growth. This paper therefore assessed how the local industries influenced

employment generation; and how the combined effect of international trade and local industries in Nigeria influenced employment generation.

Literature Review

Trade openness

It is the degree in which a nation allows the unhindered flow of goods and services across its national boundaries (Apostolov 2026). It is often calculated as the addition of imports and exports divided by the gross domestic product. It is often driven by low tariffs and a few barriers in exports and imports of goods and services. Trade openness leads to the exchange of goods and services, revenue, reduction of prices of commodities, creation of jobs and the establishment of international collaboration. Countries that have strong trade openness systems usually develop their economies at a quicker rate because they have access to the necessary machinery, equipment, and resources as a result of international trade (Catalano, 2023). Such trade presupposes crossing the borders with raw materials, food products, and industrial equipment and providing the possibility to expand the markets and get access to high-quality products that are unavailable in the home countries (Kenton et al., 2023). International trade produces competition and increases consumer satisfaction by equalizing prices and enhancing quality of the products. Trade, however, is not able to satisfy all the needs of a country because of time delays and high costs. This is where the local industries come in.

Industrial Development

Industrial development is the economic transformation process from resourced based economies to modern based economies (Rasheed et al, 2026). It involves the use of technology and infrastructure to expand the industrial capacity of an economy to boost economic growth (Challoumis 2024). This creates jobs and increases the standard of living of the people. Local industries are ingredients of industrial development. The local industries specialize in the manufacture of goods and services in the local markets including small-scale tie-and-dye artisans and large food processing companies (Kenton & Murray, 2024). Global economies rely on local industries, which lead to economic growth, creation of employment, and development of communities. These are vital services, enhance infrastructure locally, and give scholarships to the less fortunate communities. It has been proved that the capacity of local industries to generate employment can reduce crime, poverty and social development.

Employment Generation

Employment generation or job creation is the process of providing paid jobs to unemployed or redundant individuals (Guo et al, 2025). Job creation comes to reality through investment, entrepreneurship, absence of national insecurity and policy interventions from the government (Genty, 2013). Job creation is vital in the reduction of poverty, social stability and financial security (Onunwa 2025). It allows people to make both ends meet, train their children and create a better future. Other determinants affecting the creation of employment are education whereby higher qualifications are likely to result in greater employment prospects, age, where the employer usually has age restrictions on hiring, and other factors like marital status, family ties, and access to government grants. A mutual relationship also exists between trade and local industries. The international trade exposes local producers to the global markets where they can advertise their products and export them, and federal government support assists local industries to enhance the quality of their products and compete in the international markets (Murphy, 2022). International

trade minimizes the dependence on imports, through export promotion that will demand for the goods that are produced locally in the foreign markets.

Theoretical Review

There are some theories which are taken into consideration to describe the dynamic relationship involving the international trade, local industries and generation of employment or job creation. According to the Country Similarity Theory described by Tversky & Gati (2024) and further elaborated by Larch et al (2025), Tutar et al (2026), Gaebel (2026), similarities between the level of economic development are expected to lead to similarities in preferences of goods and services by consumers in different nations. Linder also states that firms would first make production to their own markets and then exporting. They tend to realize that there are no significant differences in the taste of foreign market consumers, and as such, trade is mostly practiced between countries that have a similar per capita income. Such relation leads to good trade relations and economic transactions among such countries (Edward 2026).

The Product Life Cycle Theory created by Vernon (1966) and re-examined by Vernon (1971), Vernon (1979), Rasiah and Yap (2019) also recognizes three components of product life cycle: new product, maturing product and standardized product. First, a new product is marketed in the home country where it is accepted and then it can be exported. An example is the Infinix smartphone, which was a Chinese product but came as a new commodity to the Nigerian market. Nevertheless, the theory has its weaknesses especially in explaining the current trend of trade and the fast growing global production. It is relevant because it throws light on the tendency of new products to replace the old ones, which can lead to job losses in the sectors that manufacture obsolete products.

Moreover, factor endowment theory or the Heckscher-Ohlin theory was formulated by Swedish economists Eli Heckscher and Bertil Ohlin between 1919 and 1933. The theory focuses on the importance of factor endowments in the determination of comparative advantage of trade in a country. It asserts that countries are more likely to export commodities that they are most efficient in producing, and capitalize on their resources. Crude oil and agricultural products like cocoa are just some examples that are exported by Nigeria due to its natural endowments. The theory further assumes that factors of production, e.g., labour, capital and entrepreneurship are mobile within a given country and not across countries. The theory concludes that international trade enhances aggregate capital, economic growth and lowers unemployment rates by enhancing the exchange of goods and services

Moreover, Keynes (1936) came up with the Keynesian Theory of Unemployment. The theory relates unemployment rates with the aggregate demand of goods and services. According to Keynes, the employment depends upon the total output of an economy because increased output results into increased employment rates (Schumpeter, 1946; Glynn and Howells, 1994; Chandra, 2024). The theory highlights the significance of government policies and industrialization to sustain demand and to minimize unemployment. In the case of Nigeria, the theory emphasizes on strong support by the government and industrialization to overcome the problem of unemployment. All these theories offer a solid structure to examine the interrelations between the major variables of this study.

Empirical Review

The available studies in Nigeria have concentrated on the connection between international trade and economic development without much emphasis in local industries. Whereas certain works show that international trade has a positive effect on economic growth and employment, other works show adverse effects, particularly on the issue of unemployment and industrial development. In particular, Abiodun (2017) examined the role of international trade in the economic development of Nigeria, with variables being the real GDP, exports, imports, trade openness, and gross capital formation. The research established that economic growth was positively correlated with international trade using the Error Correction Mechanism. It proposed that the government and the business sector would lead to the strengthening of finances and diversification of the economy. Correspondingly, Afolabi et al. (2017) found that there was a positive correlation between government spending, interest rates, exports, and imports and economic growth. The analysis, which included 1981-2014, showed that the exchange rates and foreign direct investment (FDI) had a negative influence on the economy, but the influence of the international trade in general was positive.

Agbo et al. (2018) also supported this opinion, where a significant impact of the trade export on the economic growth of Nigeria was demonstrated by applying multiple regression analysis. The paper advised that Nigeria should concentrate on improvements of the export business than imports to promote a healthier trade environment. Similarly, Briggs et al. (2022) discovered that international trade reduced unemployment (particularly in the short-term) by concentrating on the following variables: trade openness, foreign direct investment, and real exchange rate. This is in line with the results by Ogundipe (2022), who applied the ARDL model to show that international trade is an important factor in alleviating poverty and unemployment in Nigeria.

Nonetheless, other researchers have found out that trade openness has negative impact on employment and industrial growth in Nigeria. As an example, Abubakar and Inedu (2018) discussed the role of the industrial sector in the diversification of the economy and the ability to decrease unemployment and found that the relationship between oil, gas, industries, and solid mineral resources and GDP is negative. Similar to the previous study, Akinbola et al. (2017) concentrated on the issue of electricity supply to the industrial sector and discovered that the policies of the government in relation to electricity had a negative impact on the industry, thus raising unemployment. On the same note, it was noted by Ikechukwu et al. (2019) that trade openness may result in a rise in prices, whereas an increase in income and GDP may offset the adverse effects on unemployment.

Atan and Effiong (2020) also investigated the contribution of industrialization and FDI in eliminating youth unemployment based on a time series data of 1981-2019. The research found out that industrialization was supported by foreign direct investment and natural resource exploitation and not by human capital and inflation, indicating that a more focused industrial policy is required to decrease unemployment. These results are opposite to the results of Oyebanji et al. (2022) who concluded that production in the industry directly increases GDP and, accordingly, the level of employment.

In the meantime, comparative analysis of various countries offers further background. In a study of 89 countries, Keawphun (2016) concluded that trade openness had adverse effects on employment, but the effect did not significantly differ in different periods. This is contrary to Kim (2011) who

investigated the connection between foreign trade and unemployment in 20 OECD countries and discovered that as imports rose, unemployment also rose in the developed economies but this was not evident in the developing economies. In addition, Ogbokor (2001) concentrated on the macroeconomic effect of oil export and discovered that oil export had positive effect on economic growth. This implies the importance of export of resources, especially oil in the Nigerian economy. Conversely, Okorie and Iheanacho (2016) investigated the impact of protectionism on exports in the period 1990 to 2013 using ARDL model. The research discovered that real GDP, unemployment, labour, and output fostered economic growth, and policy changes to improve international trade were necessary.

The reviewed empirical studies indicated both positive and negative sides of international trade in Nigeria. Although most studies, including those by Abiodun (2017), Agbo et al. (2018), and Ogundipe (2022) focused on the fact that international trade can contribute to economic growth, decline in unemployment, and alleviation of poverty, the rest of the studies, including those by Akinbola et al. (2017) and Abubakar and Inedu (2011) In order to take advantage of international trade, some of the policies that have been suggested are the promotion of export business, foreign direct investment, development of industrial infrastructure and the development of more diversified economy that is not heavily dependent on oil exports. Furthermore, trade openness was also reported to lower the unemployment rate, although not all of the studies included this point (Briggs et al., 2022; Nwosa et al., 2020), and not all of the studies mentioned the negative effects on job creation (Keawphun, 2016). Also, other studies, including Abubakar and Inedu (2018) and Kim (2011), have offered a more polarizing perspective, demonstrating that the advantages of trade can be conditional on the more general structural variables of industrial diversification, government policies, and international trade processes.

Methodology

Theoretical Framework

The theoretical framework focuses on the Keynesian theory of unemployment as it examines how trade openness leads to economic transformation the increase in exports that boosts domestic consumption. This protects our local industries thereby generating employment in the industrial sector of the economy. The theory explains how trade openness fosters the import of new machines which increases the industrial capacity of an economy which drives long term industrial development.

Model Specification

Since the current research is aimed at examining the combined effects of trade openness and industries on employment in Nigeria, this research takes the form of adapting the model by Egbuche et al. (2016) that represents the functional relationship between international trade and employment as in Equation (1).

$$EMP_t = f(OPEN_t) \quad (1)$$

The model however is adjusted to include industrial output as well as the control variables (exchange rate, foreign direct investment, gross capital formation, gross domestic product per capita and inflation rate) into the model.

$$EMP_t = f(OPEN_t, IND_t, EXR_t, FDI_t, GCF_t, GDPPC_t, INF_t) \quad (2)$$

In Equation (2), EMP_t represents employment at time t , $OPEN_t$ represents trade openness at time t , IND_t represents industrial output rate at time t , EXR_t represents exchange rate at time t , FDI_t

represents foreign direct investment at time t, GCF_t represents gross capital formation at time t, and INF_t represents inflation rate at time t. Subsequently, the logarithmic form of Equation (2) is expressed explicitly as Equation (3).

$$\ln EMP_t = \beta_0 + \beta_1 \ln OPEN_t + \beta_2 \ln IND_t + \beta_3 \ln EXR_t + \beta_4 \ln FDI_t + \beta_5 \ln GCF_t + \beta_6 \ln GDPPC_t + \beta_7 \ln INF_t + \varepsilon_t \quad (3)$$

Where β_0 depicts the constant term, $\beta_1 \dots \beta_7$ denote the estimated parameters, $\ln$ denotes log, ε_t stands for the error term.

A-priori expectation: $\beta_1 > 0, \beta_2 > 0, \beta_3 < 0, \beta_4 > 0, \beta_5 > 0, \beta_6 > 0, \beta_7 > 0$

Techniques of Estimation

This analysis uses the Autoregressive Distributed Lag (ARDL) model by Pizarro, et al. (2001). ARDL model can be applied in estimation where the order of integration is a combination of order zero $I(0)$ and other one $I(1)$. Accordingly, the ARDL model version of Equation (3) is represented in Equation (4).

$$\Delta EMP_t = \beta_0 + \sum_{i=1}^p \tau_i \Delta EMP_{t-i} + \sum_{i=0}^{q_1} \delta_i \Delta OPEN_{t-i} + \sum_{i=0}^{q_2} \omega_i \Delta IND_{t-i} + \sum_{i=0}^{q_3} \lambda_i \Delta CV_{t-i} + \beta_1 EMP_{t-1} + \beta_2 OPEN_{t-1} + \beta_3 IND_{t-1} + \beta_4 CV_{t-1} + \nu_t \quad (4)$$

with Δ representing the differenced operator, $\beta_i, \tau_i, \delta_i, \omega_i$ and λ_i the estimated parameters, p is the number of lags of the endogenous variable, and q_i is the number of lags of the explanatory variables. Besides, CV are the control variables of the model. Along with that, to explain the short-run dynamics of the ARDL model, the error correction model form of Equation (4) is given in Equation (5).

$$\Delta EMP_t = \beta_0 + \sum_{i=1}^p \tau_i \Delta EMP_{t-i} + \sum_{i=0}^{q_1} \delta_i \Delta OPEN_{t-i} + \sum_{i=0}^{q_2} \omega_i \Delta IND_{t-i} + \sum_{i=0}^{q_3} \lambda_i \Delta CV_{t-i} + \beta_1 EMP_{t-1} + \beta_2 OPEN_{t-1} + \beta_3 IND_{t-1} + \beta_4 CV_{t-1} + \gamma_1 ECT_{t-1} + \nu_t \quad (5)$$

The ECT in Equation (5) is the error correction term which measures the speed of adjustment towards equilibrium and its estimate must range between 0 (denoting no convergence) and -1 (denoting perfect convergence).

Description of Variables

Employment (EMP): It is the converse of unemployment and it is a circumstance under which there is a work agreement in which an individual offers the services to the company in exchange of a compensation.

Trade Openness (OPEN): This is the ratio of export to imports in relation to the gross domestic product. It is the sum of the imports and exports which is made normal by the gross domestic product.

Industries (IND): These are a collection of firms which manufacture similar commodities to be used by man and animals like beverage industries, textile industries, sugar industries, cement manufacturing industries among others. This study uses industrial output to measure industries.

Exchange Rate (EXR): It is the comparison of the value of the local currency to the foreign one. The exchange rate usually varies country to country. It is either flexible or non-flexible.

Foreign Direct Investment (FDI): It is the ownership in a foreign nation by an investor or a business of another country. It is a basic element of economic integration and it ensures multilateral links between nations.

Gross Capital Formation (GCF): This refers to the aggregate investments in a country. It is inclusive of new buildings, machineries, infrastructures, inventories and other categories of long-term assets.

Gross Domestic Product per capita (GDPPC): It is an economic measure which divides the economic performance of a country to the distribution of every person in that country. It is

employed to establish the development of the economy of a country because there is a direct correlation between the GDPPC and the industrial growth of a particular country.

Inflation rate (INF): This is a consistent increase in the overall level of prices. It is a scenario whereby money is in pursuit of a limited number of goods in the economy as inflation decreases the purchasing power of the people. It is measured by the consumer price index.

Scope and Sources of Data

The period of the study is 1981 to 2022. This was occasioned by the insufficiency and unavailability of the data in past and present years in case of Nigeria. The period used in the study includes the period during which the government undertook reforms in order to promote international trade. The research utilizes secondary data sources that are found in Central Bank of Nigeria (CBN) Statistical bulletin and World Development Indicators (WDI) database.

Results and Discussion

Unit Root Test Results

The literature shows that in the majority of cases, time series data are not at level and this requires the data being used to conduct the study to be subjected to unit root test. To test the unit root property of the data used in this study, the Augmented Dickey Fuller (ADF) and the Phillips-Perron (PP) are used. The results in Table (1) show that all the variables in the estimated model are not stationary at level, but they all become stationary after the first difference. Therefore, the variables are considered to be all integrating of order one, i.e. they are I(1) variables.

Table 1: Unit root test results

ADF			PP		
VARIABLE	LEVEL	FIRST DIFF.	LEVEL	FIRST DIFF.	RESULTS
LEMP	-2.904 (0.717)	-4.029 (0.015)	-2.363 (0.393)	-4.029 (0.015)	I(1)
LOPEN	-2.008 (0.580)	-7.143 (0.000)***	-1.777 (0.698)	-12.726 (0.000)***	I(1)
LIND	-0.062 (0.994)	-6.251 (0.000)***	-0.379 (0.985)	-6.309 (0.000)***	I(1)
LEXR	-3.271 (0.085)	-7.433 (0.000)***	-3.362 (0.070)*	-7.337 (0.000)***	I(1)
LFDI	-2.441 (0.354)	-7.868 (0.000)***	-2.353 (0.398)	-8.297 (0.000)***	I(1)
LGCF	-0.446 (0.982)	-5.412 (0.000)***	-0.584 (0.975)	-5.422 (0.000)***	I(1)
LGDDPC	-3.053 (0.131)	-5.327 (0.000)***	-3.053 (0.131)	-5.342 (0.000)***	I(1)
LINF	-3.207 (0.097)	-5.202 (0.000)***	-2.468 (0.342)	-5.202 (0.000)***	I(1)

Source: Researcher's computation from Eviews. *** denotes significance at 1%

4.2 Test for Co-integration

As the time series data employed in the study are not at level but stationary at the first difference, co-integration test is necessary to determine the presence or absence of long-run relationship between the variables. The value of F-statistic (6.58) of the ARDL bounds test in Table 2 is greater than the upper critical value at 1% level of significance (3.9), demonstrating the existence of the long-run relationship between the variables in the model estimated.

Table 2: ARDL F-Bounds Test

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.594	10%	1.92	2.89
K	7	5%	2.17	3 .21
		2.5%	2.43	3.51
		1%	2.73	3.9

Source: Researcher's Computation

Short-run and Long-run Results

The ARDL results in Table 4 comprises of the short-run result in Panel A and the long-run result in Panel B. The co-integrating term coefficient of -0.431 indicates the adjustment to the equilibrium of approximately 43% in a year in case there is any distortion in the short-run. Also, the negative coefficient that is significant at 1% level of significance buttresses the existence of long-run relationship among the variables in the estimated model. This also depicts how the ARDL technique is suitable in this study. Table 3 also shows that trade openness (OPEN) has positive and significant impact on employment both in short and long-run. It implies that the growth in the amount of international trade is bound to provide more employment opportunities to individuals in the short and long-run. The rate of poverty and crime in the country will reduce due to the surge in the rate of job creation. These findings conform to the a-priori expectation that increase in trade openness is positively related to employment generation in an economy. The finding of this study is in tandem with the findings of studies by Abiodun (2017) and Afolabi et al. (2017) which reveal direct relationship between international trade and economic growth, Briggs et al. (2022) and Ogundipe (2022) that international trade reduces unemployment.

Also, in the short-run, a 1% increase in industrial output (IND) leads to increase in employment by 0.34% at a 1% level of significance. In the long-run, a 1% rise in industrial output accelerates employment of people positively by 0.12% even though it is not significant. Therefore, there is a strong positive impact of industrial output on employment in the short-run and weak impact in the long-run. These findings are in agreement with a-priori expectation of positive association among industrial output, employment. This demonstrates that as the number of industries in Nigeria increases both in the short and long-runs, there are propensities of reducing unemployment and hence, contributing positively to the economic growth of the country. This finding is in conformity with the postulate of Keynes (1936) that industrialization is key in maintaining demand and reducing level unemployment.

Moreover, employment has a direct and significant relationship with exchange rate (EXR) in the short-run, but an inverse relationship in the long-run. Likewise, the lag of the exchange rate impacts on employment significantly with a positive effect. This connotes that, the depreciation of naira will result to increase in employment generation in the short-run whereas it will compound the unemployment problem in the long-run. This short-run result is at variant with the finding of Briggs et al. (2022) that increase in exchange rate would reduce unemployment. Besides, an increase in the foreign direct investment (FDI) by 1% will result in a 0.02% growth of employment in the short-run and a 0.08% growth in the long-run that is consistent with the a-priori expectation. It is worth noting that the short-run impact of FDI on employment is notable, whereas the long-run impact is not significant at 5% level of significance, but it is significant at 10% level. In the meantime, gross capital formation (GCF) has no meaningful impact on the employment in the short-run and long-run.

In contrast to the point where inflation rate has a significant positive effect on employment generation in the short-run, the same effect is not significant in the long-run. In the short-run, GDP per capita (GDPPC) does not have any effect on employment while a 1% rise in GDP per capita will bring about a 0.26% increase in employment in the long-run at 1% level of significance. Moreover, both short- and long-run effects of inflation rate (INF) have positive impact on employment, but the long-run effect is not significant.

Table 3 Short-run						
Variable	Coefficient	Std. Error		t-Statistic	Prob.	
D(LOPEN)	0.058	0.021		2.716	0.012	
D(LIND)	0.344	0.109		3.154	0.004	
D(LEXR)	0.171	0.034		4.999	0.000	
D(LEXR(-1))	0.100	0.029		3.481	0.002	
D(LFDI)	0.018	0.007		2.504	0.020	
D(LGCF)	-0.010	0.048		-0.208	0.837	
D(LINF)	0.037	0.010		3.785	0.001	
D (LINF (-1))	0.061	0.010		6.104	0.000	
CointEq (-1)*	-0.431	0.048		-8.896	0.000	
R-squared	0.766				-	
Adjusted R-squared	0.707					
Durbin-Watson Stat	2.202					

Table 4: LONG-RUN				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOPEN	0.265	0.081	3.271	0.003
LIND	0.124	0.419	0.297	0.769
LEXR	-0.094	0.037	-2.513	0.019

LFDI	0.077	0.037	2.068	0.050
LGCF	0.203	0.181	1.121	0.273
LGDP	0.262	0.074	3.560	0.002
LINF	0.044	0.041	1.058	0.300
C	-2.938	1.223	-2.402	0.024

Source: Researcher's Computation (2026)

Diagnostic Tests

With the intention of certifying whether the findings of this study is reliable, or otherwise, this study carries out some diagnostic tests in table 5. The value of Adjusted R-squared of 0.707 represents the fact that the exogenous variables in the model (trade openness, industrial output, exchange rate, foreign direct investment, gross capital formation and inflation rate) together explain approximately 71% of the variation in the endogenous variable (employment). In addition, the value of Kurtosis of approximately 3 with the non-significance of the Kurtosis value of the Jarque-Bera test describes the variables in the estimated model to be normally distributed. In the meantime, the fact that the F- statistic of the Serial Correlation test is insignificant demonstrates that there is no autocorrelation, and hence, it means that the residuals in the model estimated are uncorrelated. On the same note, the F-statistic of the Heteroskedasticity test is not significant which means that the residual values are not dissimilar at all the values of the independent variables.

Table 5: Diagnostic Tests	
Test	Statistic
R-squared	0.766
Adjusted R-squared	0.707
Jarque-Bera (p-value)	1.051 (0.591)
Breusch-Godfrey Serial Correlation	1.181 (0.326)
Breusch-Pagan-Godfrey Heteroskedasticity	0.488 (0.929)

Source: Researcher's Computation (2026)

Also, to determine the stability, or lack of stability of the long-run coefficients of the ARDL model, this study performs the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMSQ) tests. According to Figure 1 and Figure 2, the CUSUM and the CUSUMSQ graphs indicate that the long-run coefficients are constant because the graphs do not leave the 5% significant critical values. Therefore, the graphs are used to support the long-run effects of the independent variables on employment in Nigeria.

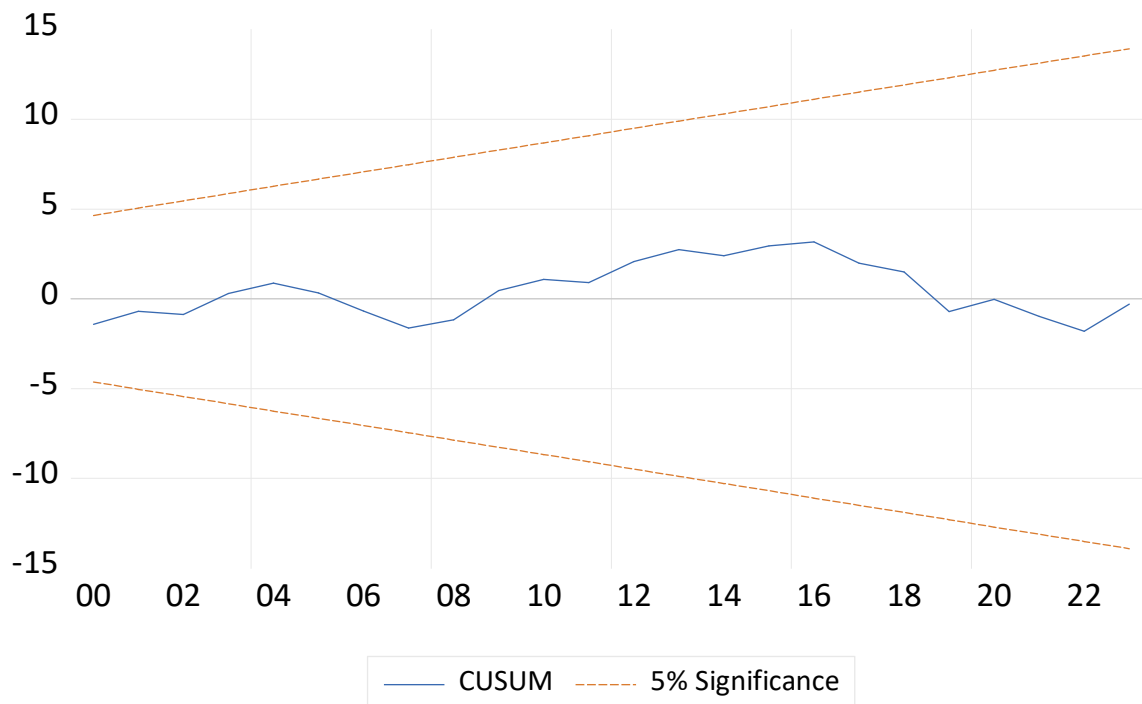


Figure 1: Cumulative Sum (CUSUM)

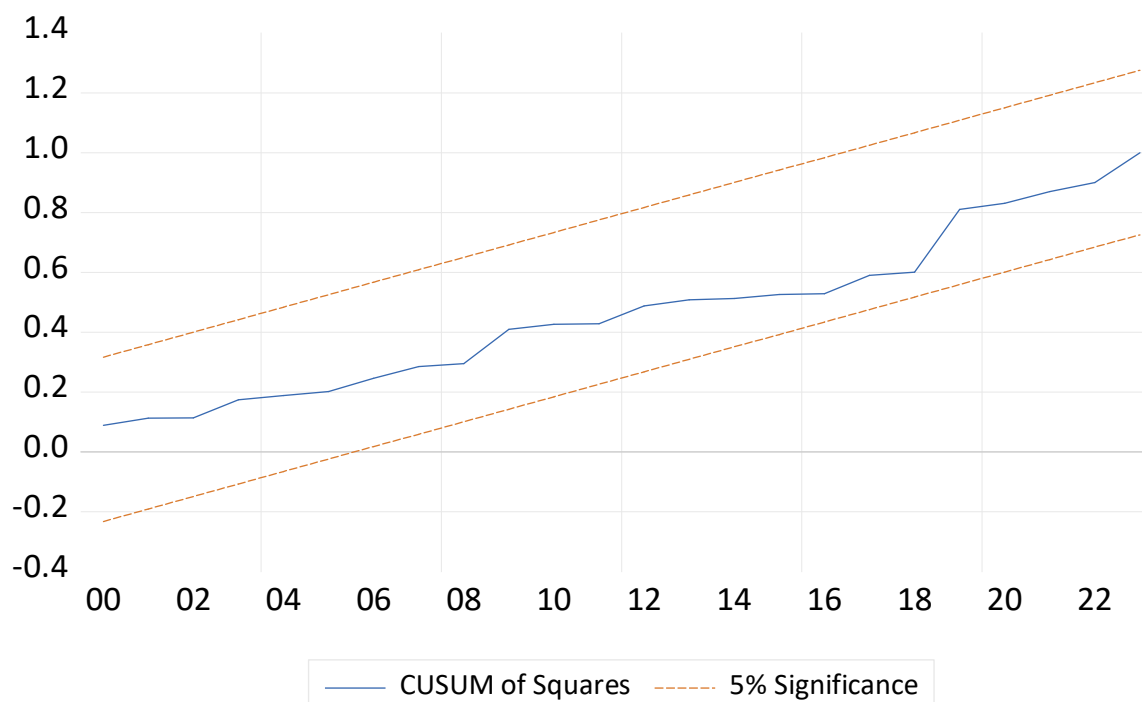


Figure 2: Cumulative Sum of Squares (CUSUMSQ)

Conclusion

This paper is an empirical analysis of how trade openness, industrial output, and employment are related in Nigeria based on time-series data between 1981 and 2022. The results validate the

presence of a stable long-run relationship between the variables which implies that trade and industrial activities are key determinants of labour market performances. In particular, the trade openness has a consistent beneficial effect on employment both in the short and long-term implying that greater involvement in the global markets is likely to spur job creation by increasing the level of economic activity. Although the industrial output has a positive effect on employment in the short-run, it fails to maintain its relevance in the long-run. This is a pointer of structural weakness of the industrial sector in Nigeria which is low productivity, infrastructural shortages and competitiveness. Also, the ambivalent effect of the exchange rate illustrates the complexity of macroeconomic conditions, and foreign direct investment and income development proves to have supportive functions in the employment creation. Therefore, the research confirms that openness to trade is not enough to ensure sustainable growth in employment unless there is a robust and competitive local industrial foundation. The results support the fact that trade policies should be combined with industrial development strategies in order to attain inclusive economic growth and mitigate unemployment in Nigeria.

Recommendations

On the basis of the findings, this paper suggests a holistic policy framework that is able to reconcile the goals of trade liberalization and industrial development. To begin with, the government ought to encourage export oriented industrialization through incentives like tax rebates, subsidies and better access to finance by local manufacturers. Increasing the domestic production capacity will help the industries in Nigeria to compete favorably with those in the global markets and convert the gains of trade to job opportunities. Second, critical infrastructure, especially supply of electricity, transportation systems and technological capacity are to be enhanced in order to increase industrial productivity. The long-run effects of industrial output on employment will not be substantial in the absence of these structural constraints. Third, the policymakers should implement policies that would control the exchange rate volatility to avoid the negative long-run outcomes on employment. A healthy macroeconomic situation will facilitate investment and sustainable employment. Also, there should be an effort to attract good foreign direct investment that facilitates transfer of technology, skills and integration of the local content. These investments are supposed to be directed towards the areas that have high employment opportunities. Lastly, the government should introduce policies which will promote the consumption of local products produced thus decreasing the dependence on imports and boosting the local industries. To ensure a sustained employment generation in Nigeria, a coordinated effort that incorporates trade, industrial, and macroeconomic policies is needed.

References

- Abiodun, K. (2017). Contribution of International trade to economic growth in Nigeria. *Global Journal of Human-Social Science: E-Economics*, 17(5), 35-45.
- Afolabi B., Danladi, J.D., & Azeez, M.I. (2016). International trade and economic growth in Nigeria. *Global Journal for Human Social Science: E-economics*, 17(5), 35-43.
- Agbo, E.I., Agu, R.E., & Eze, L. O (2018). Impact of international trade on the economic growth of Nigeria. *European Journal of Business and Management*, 10(18), 222-283.

- Akinbola, O.A., Zekeri, A., & Idowu H. A. O (2017). The power sector and its impact on the industrialization of businesses in Nigeria. *Archives of Business Research and Complementary Medicine*, 4(4), 541–552.
- Arodoye, N.L., and Iyoha, M.A (2014). Foreign trade economics growth nexus: Evidence from Nigeria. *CBN Journal of Applied Statistics*, 5(1), 121-141.
- Atan, J. A., & Effiong, U. (2020). Industrialization and Youth unemployment in Nigeria *International Journal of Business and Economic Research*, 9(5), 334–334.
- Azeez, R. O., & Genty, K. I. (2018). Inner life, meaningful work, conditions for community, and organisational citizenship behaviour. *Economics and Business*, 32, 136-148.
- Belenky, M., & Riker, D. (2015). Theory and evidence linking international trade to unemployment rates. *Office of economics working paper U.S international trade commission*, 2015-01B. 1-13.
- Briggs, D.T., Nteegah, A., & Ohale. L. (2022). Does international trade reduce unemployment? Empirical evidence from Nigeria. *Asian Journal of Economics, Finance and Management*, 8(2), 18-37.
- Briggs, I.N. (2007). Nigeria: mainstreaming trade policy into national development strategies. *African Trade Policy Centre*, 52, 45-54.
- Catalano, J. T. (2023). International trade: Definitions, benefits and criticisms. *Investopedia*.
- Cosmos, A. (2022). Factors driving Industrialization in Africa: A panel two stage least square Approach. *Modern Economy*, 13(2), 144-158.
- Effiong, U. E. (2022). Industrial Policies and Industrial Sector Performance in Nigeria. *Asian Journal of Economics, finance and management, India*, 5(4), 184-207A
- Effiong, U. E., & Ekong, C. N. (2021). Global Trends in Financial Sector-Led Industrialization: How did Nigeria Fare? *Asian Journal of Economics, Finance and Management, India*, 5(4), 184-207A.
- Egbuche, A.N, Kālu, I.E & Otto, G. (2018). Foreign trade and unemployment in Nigeria (1981-2017) *World Journal of Innovative Research (WJIR)*, 5(5), 43-47.
- Egwatu, A. (2021). Worsening unemployment, why jobs are disappearing in Nigeria. April 4 *European Research Studies Journal*, XX(3A), 758-773.
- Emmanuel, T., Shah, S. A. & Pigka-Balanika, V. (2023). Trade openness and economic growth in Nigeria. *Nigerian Journal of Management Sciences Repository*, 24(2a), 218-229.
- Felix, P. S. (2019). The Role of Infrastructure in Industrialization in a Developing Economy: The case of electricity supply and education in Nigeria in Nigeria's development. A catalyst for economic growth.
- Godfrey, E.B. (2011). The impact of industrialization output on Economic growth in Nigeria. *African Journal of Commercial Studies*, 2(4), 43-59.

- Goff, M, Raju J & Singh R.J (2012). Does trade reduce poverty? A view from Africa. *Journal of African trade growth of Nigeria. International Journal of finance and accounting*, 5(4), 171-183.
- Holis, B. (1999). The Impact of Industrialization and Economic Growth and Development in Nigeria. *Vol.4 No 1. African Journal of Commercial studies*, 4, 13-25.
- Keawphun L (2016). Impact of trade opening on unemployment. *Southern Illinois University. Carbondale Open SIUC Research Papers Graduate School*.
- Ikechukwu, D.N, Kālu, E.U Gulcay, T (2015). Trade openness and unemployment: Empirical evidence for Nigeria, 26 (1), 117-136.
- Kenton, W & C. Murray (2024). What is an economic sector and how do the four main types work?. *Investopedia.com*.
- Kim, J. (2011). The effects of trade on unemployment: Evidence from 20 OECD countries. *Journal of international economics*, 64(2), 411-439.
- Li, Y., Hu, M., & Zhao, L. (2023). Study on the impact of industrial green development and technological innovation on employment structure. *Frontiers in Earth Science*, 11, Article 1115476.
- Loto, M. A (2012). Global economic downturn and the manufacturing sector performance in the Nigerian economy. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)*, 3(1), 38-45.
- Murphy, S. (2022). How American businesses can benefit from trade. *US Chamber of Commerce*.
- Ndiaya, C., & Kangjuan, L. (2018). Role of industrialization on economic growth: The experience of Senegal (1960-2017). *American Journal of Industrial and Business Management*, 8(10), 2072-2085.
- Nwosa, P, Keji Adebayo S & Fasina O (2020). Trade openness and unemployment rate *Gradea Journal of Business and Economics. University of Gradea*, 5(2) 52-62.
- Ogbimi, F. E. (2007). Promoting sustainable economic growth and industrialization: solution to mass unemployment and poverty. *African Journal of Traditional, Complementary, and Alternative Medicines*, 4(4), 541-552.
- Ogbokor. O (2001). Oil and economic growth: an econometric analysis. *Journal of Development, Alternatives and Area Studies*, 20, 124-134.
- Ogundipe, M. (2022). Trade liberalization and poverty in Nigeria (1981-2018). *Research Square*.
- Okorie K, & Iheanacho (2016). The impact of trade protectionist policy on the economic growth in Nigeria. *International Journal of Finance and Accounting*, 5(4) 171-183.
- Olusoji, M. O., & Oderinde, L. O. (2011). Fiscal Deficit and Inflationary Trends in Nigeria: A cross causal analysis. *Journal of Economic Theory*, 5(2), 37-43.
- O'Neil, S.K. (2024). The United States missed opportunity in Latin America: Economic security begins closer to home. *Foreign affairs*, 103(2), 86-97. *Foreign Affairs Author Archive*.

- Onifade S.T, Ay, A & Bekun, F.V (2020). Revisiting trade and unemployment nexus: Empirical nexus from the Nigerian economy. *Journal of Public Affairs*, 20(3), e2053.
- Oyebanji, J. I., Aderounmu, A. O., & Ewert, P. J. (2022). Impact of Industrialization on Economic Growth in Nigeria. *Journal of Economic and Financial Sciences*, 15(1), 796-810.
- Peter, E. A. (2019). An Empirical Analysis of the Impact of Foreign Direct Investment and Industrial Sector Performance on Nigerian Economy. *European Journal of Business and Management* 11(11), 2222–2839.
- Pologeorgis, A. N. (2023). Employability, the labor force and the economy. *Investopedia.com*.
- Sule, A., & Inedu, H. (2018). Industrialization and the quest for economic diversification in Nigeria (1970-2017). *Abuja Journal of Economics and Allied Fields (AJEAF)*, 6(2), 11-21.
- Umoru D. (2013). Employment and international trade flows in Nigeria. *International Journal of Business and Social Science*. 3(7), 948-977.
- Winters L. A & Ubaldo.M (2020). International trade regulation and job creation. *IZA World of Labor*, 75(2). [doi:10.15185/izawol.75.v2](https://doi.org/10.15185/izawol.75.v2) [1, 2].
- Yolanda H. (2017). Impact of export development on unemployment in Indonesia. *European Research Studies Journal*, XX(3A) 758-773.