International Journal of Developing and Emerging Economies
Vol.12, No.2, pp.1-23, 2024
Print ISSN: 2055-608X (Print),
Online ISSN: 2055-6098(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

The Impact of Manufacturing Output On Employment in Nigeria

Owan, Jacob Ogar, Ph.D
Department of Economics, University of Calabar, Calabar

Ifere, Eugene Okoi, Ph.D
Department of Economics, University of Calabar, Calabar.

Odey, Ferdinand Ite, Ph.D
Department of Economics, University of Calabar, Calabar.

doi: https://doi.org/10.37745/ijdee.13/vol12n2123 Published May 13, 2024

Citation: Ogar O.J. , Okoi I.E., and O.F. Ite (2024) The Impact of Manufacturing Output On Employment in Nigeria, *International Journal of Developing and Emerging Economies*, Vol.12, No.2, pp.1-23

ABSTRACT*:* *Nigeria has lower manufacturing employment than other industries for several reasons, including it share to Gross domestic product. Nigeria's manufacturing sector contributes less than 10 percent of the nation's GDP. This suggests that the sector's overall economic production is weak, which may restrict its ability to provide job opportunities to the teeming populace. This study investigates the impact of manufacturing output on employment in Nigeria. The Autoregressive Distributive Lag (ARDL) estimation technique was used to establish the long run relationship among the variables. It was revealed that long run relationship exists among the variables in the estimated model. The results of the Error Correction Mechanism (ECM) within the framework of the ARDL shows that the development of the manufacturing sector is one of the key strategies for the creation of employment opportunities in Nigeria. The study recommends; the development and diversification of the manufacturing sector as one of its top long-term policy strategies for the creation of employment for Nigerians. It also suggests that policies aimed at attracting foreign investment in this sector could positively impact on employment generation. This can be accomplished by providing incentives to the operators of the manufacturing sector, such as import waivers on essential imported inputs, providing and guaranteeing large commercial trading businesses to enter the manufacturing of their products through licensing, facilitating and acting as surety in franchise agreements with foreign manufacturers, and any other incentive to help lower the manufacturing sector's cost of production. Hence, the government must prioritize the development of the manufacturing sector by providing necessary support and incentives to attract more investors and increase local production, which will lead to job creation and economic growth for Nigerians.*

KEY WORDS*:* manufacturing output, employment, GDP, ARDL, Nigeria.

INTRODUCTION

The primary goal of manufacturing sector development is to increase the economy's productive capacity to generate more goods and services (Rubmann, 2015). Increasing the economy's productive capacity is beneficial in multiple ways, such as increased employment, increased income for individuals and businesses, improved living standards, and economic stability (Porter, 2000; Bhide, 2009). In addition, Nigeria's foreign exchange woes may also be solved by developing the manufacturing sector, reducing the country's dependence on imports, thus reducing the outflow of foreign exchange (David *et al.*, 2010). The manufacturing sector development process helps create new employment opportunities, bring in additional capital and resources, stimulate economic growth, and diversify the economy.

Since Nigeria's independence in 1960, the government has implemented several policies and strategies to grow the manufacturing sector. The import substitution industrialization (ISI) plan was the first of these initiatives. The goal was to lessen reliance on imported consumer goods while providing job opportunities for the Nigerian workforce. Since then, succeeding administrations have developed significant industrial plans to suit the existing economic realities of the time at various periods (Nyor & Chinge (2014) and Igwemma & Nwoko, 2007). These strategies include incentivizing and creating an environment conducive to foreign investment, lowering taxes for businesses and manufacturers, improving infrastructure, and investing in research and development.

The performance of the manufacturing sector vis-a-vis manufacturing employment shown that from 1981 to 1985, manufacturing accounted for 9.46 percent of GDP on a five-year average, while manufacturing employment accounted for 13.37 percent. The average fell to 9.29 percent between 1986 and 1990, while manufacturing employment reached 13.37 percent, an increase of 0.2 percentage points. From 1991 to 1995, the manufacturing sector's share of GDP continued to fall, from 9.35 percent to 8.65 percent, while manufacturing employment rose from 13.37 percent to 13.38 percent. From 1996 to 2000, manufacturing's share of GDP fell to an average of 6.82 percent, while manufacturing employment fell to 12.704 percent, a significant drop of more than 100 points; from 2001 to 2000, manufacturing's share of GDP fell to an average of about 6.26 percent, a decline from the previous five-period average, while manufacturing employment fell to 11.908 percent (National Bureau of Statistics, NBS, 2021; Central Bank of Nigeria, CBN, 2021). When compared with manufacturing employment and manufacturing's percentage of total employment, it becomes clear that manufacturing's contribution to GDP and manufacturing employment are positively correlated. These points to the potential of manufacturing sector to create new jobs (Krokey & Akekere, 2020; Oluranti & Osabuohien, 2010).

Nigeria has lower manufacturing employment than other industries for several reasons, including it share to Gross domestic product (GDP). Nigeria's manufacturing sector contributes less than 10% of the nation's GDP. This suggests that the sector's overall economic production is modest, which may restrict its ability to provide job opportunities. In terms of labour productivity; compared to traditional manufacturing, industries without smokestacks (IWOSS), including financial and business services and information and communication technology (ICT), have higher labour productivity. This indicates that these industries can produce more with fewer employees, which could indicate a preference for IWOSS industries in terms of job growth. The global economy has changed, with a tendency for employees to leave the manufacturing sector and move from agriculture to services. Nigeria and other growing markets and developing nations have also noticed this movement. Increasing employment in the service sector frequently reflects the loss of manufacturing jobs. Nigeria's manufacturing sector has endured slow and low utilization of its available capacity compared to other robust economies. This may hinder the sector's ability to provide job opportunities because it shows it is not working at its full potential. Nigeria's economy is growing substantially due to oil exports, even though most people are employed in agriculture. Because of the emphasis on these industries, manufacturing may receive substantially less attention and investment, reducing job possibilities (Akpunonu & Orajaka, 2021; Dauda & Ajeigbe, 2021).

From 2016 to 2020, GDP recorded a positive change of 8.57 per cent; manufacturing output recorded an increase of 12.82 per cent; cement manufacturing recorded a positive change of 43.24 per cent, food, beverage and tobacco recorded a positive change of 0.47 per cent; output of textile, apparel and footwears recorded a change increase of 32.23 per cent, output of wood and wood products recorded a positive change of 16.00 per cent while manufacturing employment recorded an increase of 5.94 per cent from the previous period (CBN, 2021). The analysis of the change in these outputs and employment shows a seemingly positive correlation between manufacturing sector development and employment in Nigeria. This study, therefore, sought to empirically establish the nexus between manufacturing sector development and employment in Nigeria.

REVIEW OF RELATED LITERATURE

Conceptual Review

The concept of manufacturing output

The concept "manufacturing" describes how raw materials or pieces are transformed into completed products by applying various techniques such as manual labour, mechanical devices, and chemical reactions. With the help of manufacturing, companies can profit by selling their finished goods for more than the cost of the materials used to make them. Creating something of greater value from these primary components increases their worth. As a result of this value addition, manufacturing is a highly lucrative link in the supply chain because the final product sells for a higher price. When assessing the importance of manufacturing to the economy, economists and government statisticians often use different measures. One such metric is manufacturing value added (MVA), which measures the contribution of manufacturing to the economy as a whole. This indicator is typically reported as a share of manufacturing GDP (Altaf, 2016; Haraguchi *et al.*,2017; Rodrik, 2016).

The concept of employment

Employment is a situation where there is a contract or agreement between an employer and an employee for work performance. In exchange, the worker receives a salary or an hourly wage. The method and technique of economic, social, and environmental development in any country depend heavily on the availability of employment opportunities. Gaining independence from one's financial situation and exercising choice through one's employment is made possible through gainful employment (Jansen & Lee, 2007).

Overview of the Nigerian manufacturing sector

About 10 percent of Nigeria's annual GDP comes from manufacturing industries. The southern cities of Lagos, Port Harcourt, Ogun and Ibadan are where most of the country's manufacturing occurs. Manufacturing is a massive industry that employs millions of people worldwide to create everything from food to clothing to electronics to automobiles to agricultural products to mining supplies to construction materials. Manufacturing in Nigeria is primarily focused on producing cement and building materials, food and beverages, tobacco, chemicals and fertilizers, wood, and textiles. Out of all, only three subsectors (food & beverage, cement, and textile) account for 77% of manufacturing output, generating the greatest value. In addition, breweries and flour mills make significant economic contributions (CBN, 2020).

The Nigerian manufacturing sector has been performing well in recent years as compared to previous years. The incentives by the government are also beginning to encourage greater interest. To encourage more output in the manufacturing sector, the government has been making it cheaper for consumers to purchase locally manufactured goods, making the foreign alternatives prohibitively expensive or unavailable through import bans, facilitation of cheaper funding, and discriminatory foreign exchange policies. Manufacturing in Nigeria is beset with quite a few challenges; chief among them is power supply. As a result, most firms rely on "emergency" power generators to run seamless operations, eventually adding to costs. The country's physical infrastructural deficiencies are also a major constraint, with difficult access to credit and the cost of imported raw materials and skilled labour as additional challenges (Simbo *et al.*, 2012).

International Journal of Developing and Emerging Economies
Vol.12, No.2, pp.1-23, 2024
Print ISSN: 2055-608X (Print),
Online ISSN: 2055-6098(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

Before it can play its expected role in Nigeria's growth, its manufacturing sector must overcome widespread problems. These difficulties have reduced the attractiveness of Nigerian exports on the global market. High manufacturing costs, including taxes and levies, are a major cause of uncompetitive industries. Unchecked smuggling/dumping of highly subsidized, inexpensive and substandard imported goods has also contributed to the problem. Lack of/difficulty in obtaining necessary forex to perform legitimate business in the country leads to the proliferation of adulterated/fake items, causing genuine enterprises to go extinct. In the current era of severe currency devaluation, shortcomings in physical infrastructure (including a broken road network, inefficient train system, frequent power outages, and inefficient waterways), and other challenges, this has remained a significant problem for the business (Simon & Awoyemi, 2010).

Major obstacles to industrialization include policy inadequacies, inconsistency, and reversals. As an illustration, the government plans to raise excise duty on alcoholic, nonalcoholic, and cigarette products at a time when the industry is struggling and requires government aid to survive. In addition, conflicting constitutional requirements and inadequate implementation of existing laws to produce money by states and local government councils have resulted in several taxation/levies, which have remained a substantial burden on enterprises, notably the manufacturing sector. "Import and trade restrictions/challenges- import and export costs in Nigeria are almost double of those in other regions." High port charges by concessionaires; a lack of adequate port handling equipment; discrepancies in HS Code interpretation by the Nigeria Customs Service, which causes importers to abandon their cargoes. Trade restrictions and their far-reaching effects on Nigeria's manufacturing sector include the Central Bank of Nigeria's (CBN) prohibition of 41 foreign items, some of which are intermediary products, from accessing foreign exchange and the imposition of a fee on select imports (Banjoko, 2009).

However, the growth rate is significantly lower than necessary to affect the lives of the population positively. It is impossible to overstate the importance of the manufacturing sector to the economy since it has contributed around 15% annually to GDP over the past five years, generating millions of jobs and billions of dollars in tax revenue for governments around the world. The food, drink, and tobacco market are one of the most important contributors to the expansion of the industry. Nigeria as Africa's largest food market due to its heavy reliance on imports and heavy investment in its domestic food production sector. It is estimated that 33.5 percent of the value produced by manufacturers comes from the food, beverage, and tobacco sector. This industry accounts for the vast majority of Nigeria's manufacturing firms (Sola *et al.*, 2013).

Theoretical Underpinnings

This study is anchored on the classical theory of employment. Adam Smith, J.S. Mill, A.C. Pigou, Ricardo, and others from the classical school of economics collaborated to create what is now known as the Classical Theory of Employment. The theory relies on the premise that all available labour and economic resources are being used. The classical theory of employment presupposes wage, interest rate, and price flexibility. The market determines each sector's wage rate, interest rate, and price level. Full employment is maintained by the economy automatically adjusting to changes in these variables. The classical theory of employment states that all else being equal, a competitive market with wage rate flexibility will always provide full employment and full employment production. The competing demands and supplies of workers on the market set the rate at which real wages rise and fall. Consequently, the real wage rate negatively affects labour demand; hence, a wage rise leads to a decline in employment demand. The labour supply is positively related to the real wage rate, rising as the real wage rate rises and falling as the real wage rate falls. The equilibrium real wage rate is reached when there is equal demand for and supply of workers. Additionally, this point is the equilibrium point for full employment (Hicks, 1937).

The real wage rate declines due to increased competition for jobs when unemployment is present. The demand for labour will rise, and the supply will fall in response to a decline in the real wage rate. Thus, people will no longer need to look for work. As a result, real wage rate flexibility guarantees full employment. The classical explanation for unemployment blames a lack of flexibility in the wage structure and government intervention in the free labour market. High unemployment results when the government recognizes trade unions and passes minimum wage legislation, and workers begin to act monopolistically.

Keynes has heavily attacked the classical theory of employment. Keynes argued that the classical theory made perfect sense. However, this theory has a major flaw: it cannot address real-world economic issues. If we try to apply it to the realities of experience, we will be led astray, which will have fatal consequences. The following are the most significant arguments against the classification theory: Keynes' main criticism of the classical premise of full employment was the first stage of the under-employment equilibrium he proposed. In the view of classical economics, unemployment was never inevitable, and full employment was the norm (Keynes, 1937).

Despite the criticisms that follow the classical theory of employment, its contribution to the understanding of the working of the marketing force, that is, demand and supply is very importance to the understanding of the demand for labour and the supply of labour and how they both work to bring the desirable level of employment in the productive sectors of the economy.

Empirical Studies

Tizhe *et al.* (2022) investigated how well the manufacturing sector in Nigeria created jobs by using annual data from 1960 to 2022 and a statistical method called descriptive statistics. The study found that the number of jobs in the manufacturing sector has decreased because many

International Journal of Developing and Emerging Economies
Vol.12, No.2, pp.1-23, 2024
Print ISSN: 2055-608X (Print),
Online ISSN: 2055-6098(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

manufacturing firms in Nigeria have closed. Therefore, poor performance in the manufacturing sector has a big impact on the number of jobs and the people's standard of living.

Specifically identifying the promising economic sectors with job creation potential for young men and women, analyzing the differential impact of sectoral growth on youth employment across rural and urban areas as well as on gender lines, and identifying the main economic and political constraints to developing key sectors relevant for youth employment, Edewor and Kollie (2022) assessed the conditions that drive youth employment in key economic sectors of the Nigerian economy. The study's analysis of descriptive statistics, which included employment elasticity, logit regression, and comparative advantage (RCA), indicated these concepts. According to the report, all economic sectors in Nigeria, including the manufacturing sector, can provide employment at varying levels. According to the study, Nigeria exhibits a comparative advantage in 17 exported goods. Also, several manufacturing, industrial, and trade clusters have been found nationwide. By properly utilizing the goods and different subsectors in which these clusters exist, it is possible to increase young employment significantly. Financial services had the biggest employment contribution, and manufacturing had the lowest, with the employment elasticity of the 12 understudied industries positively ranging from 0.056 to 0.734.

Alifa *et al.* (2021) evaluated the impact of small and medium enterprise units and output value on Indonesian provinces' economies and employment in 2017–2019. The dependent variable is regional economy and employment, while the independent variable is small and medium enterprise units and production value. This study analyses secondary data using panel data regression. Thirty-four samples yielded 102 observations. The Fixed Effect Model was utilized for panel data regression. The regional economy's dependent variable was unaffected by industrial unit number and production value. However, manufacturing units and production value positively affect employment.

Ajeigbe *et al* (2021) examined the effect of manufacturing sector development on youth unemployment in Africa using a panel data of thirty-three African countries covering 2002 to 2018.The estimation technique used was the Panel Autoregressive Distributed lag method (PARDL). The study found a positive long run relationship between manufacturing value added and youth unemployment and recommended that to curb the menace of youth unemployment ravaging major African Countries, policy focal point should be directed towards the development of manufacturing sector, conducive economic environment to attract foreign direct investment, policies should be put in place to enhance capital formation with domestic credit being made available for new and existing entrepreneurs and industrialist.

Adeniyi (2021) examined whether the Nigerian manufacturing sector creates more jobs during economic expansions, which did not occur between 1981 and 2014. The study examined industry employment intensity of gross value-added rise during expansion using the Vector Error

Correction Model. (VECM). Over the past year, manufacturing employment was inversely associated with agriculture employment. The data also show that manufacturing employment is connected with administration and social services employment throughout the past year. Manufacturing's employment elasticity of growth compared to administration and social services is 5.26 per cent a year later.

Atan and Effiong (2020) investigated the role of manufacturing sector in curbing youth unemployment in Nigeria using annual time series data from 1991 to 2019. The method of data estimation was the autoregressive distributed lag estimation technique. The study found manufacturing output to have negative effect on youth unemployment both in the short-run and in the long-run. This implies that increasing the volume of manufacturing activities will reduce youth unemployment. The Granger causality test also showed that there exists causal relationship between youth unemployment and industrialization in Nigeria.

According to Apken-Ageh (2020), the Benue Cement Company (BCC), now under the management of Dangote Industries, employs locals in menial jobs and offers necessities and welfare programs to rural communities in the Mbayion Gboko local government region of Benue state, Nigeria. The investigation was conducted using a cross-sectional survey research design. All three of the main communities in the Mbayion Gboko local government area—TseKucha, Amua, and Inonganor—were represented in the population. Four hundred fifty locals from the three largest communities in the study region were randomly chosen to make up the sample. Data were gathered using a checklist called the Menial Jobs and Basic Amenities for Locals Checklist (MJBALC) and a questionnaire called the Locals Welfare Packages Questionnaire (LWPQ). The data were estimated using the independence t-test technique. When the state government ran Benue Cement Company, the locals were moderately employed in menial tasks compared to now that which is run by Dangote Industries.

Felipe *et al.* (2019) compiled a 1970–2010 manufacturing employment and production database. They investigated if global competition and labour-displacing technology have made it harder for countries to industrialize in employment and if there are other ways to wealth. The study found all of today's rich non-oil economies enjoyed at least 18% manufacturing employment shares in the past; They often did so before becoming rich; Manufacturing peaks at lower employment shares today (typically below 18%) than in the past (often over 30%); Compared with employment, output shares are weak predictors of prosperity and under less pressure; and Late developers' manufacturing employment shares peak at much lower per capita levels. The study regression model's dynamics study and simulation show that result. Industrialization makes getting affluent harder. This is mostly due to significant manufacturing growth in some populated countries.

Charles *et al.* (2019) examined manufacturing employment decline and labour market consequences using a cross-region variation. In the 2000s, the manufacturing decline in a local area had large and enduring negative consequences on employment, hours worked, and salaries. The study shows that, many manufacturing sector promotion measures will have a limited labour market impact on less skilled workers.

Olukayode and Alimi (2018) looked into the effects of fiscal policy tools on the creation of jobs in Nigeria between 1980 and 2015. The Augmented Dickey-Fuller test, Engel Granger cointegration test, and conventional least squares tests were employed in the study to estimate the stationarity level, the long-run relationship, and long-run estimations. The study found that government spending and manufacturing production negatively impacted Nigeria's unemployment rate. Therefore, it implies that government spending and manufacturing industry output will lower Nigeria's unemployment rate. Nonetheless, the amount of taxes collected and agricultural production directly affect Nigeria's unemployment rate.
The contribution of this present study to knowledge and the filling of gap, this study investigated the impact of manufacturing output on employment in recent times given the post pandemic crisis in the manufacturing sector.

METHODOLOGY

Research design

The study investigated the impact of manufacturing sector development on employment in Nigeria. Therefore, an ex post facto (after the fact) research design was adopted to achieve the study's objectives. This type of research design enables the study to evaluate the impact of the independent variables on the corresponding dependent variable by collecting relevant data on the variables (secondary data) and determining the cause-and-effect relationships among the relevant variables.

In particular, the study adopted both descriptive and econometric tools in its analysis and estimation. The descriptive analysis employed descriptive tools such as simple tables, graphs, percentages, averages, etcetera, to analyze the trend performance of the variables, while econometric techniques, on the other hand, the ARDL estimation techniques in estimating the relevant equations under the framework of multiple regression modelling and estimation.

Model specification

This model is anchored on classical theory of employment as earlier explained. The manufacturing output-employment nexus is expressed thus:

$$MANEMP = f(MANGDP, MVA\,INV, RGDPGR, HUC, CPS, INFRA) \qquad 1$$

Where:

International Journal of Developing and Emerging Economies
Vol.12, No.2, pp.1-23, 2024
Print ISSN: 2055-608X (Print),
Online ISSN: 2055-6098(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

MANEMP = manufacturing employment rate (measures in percentage); MANGDP = manufacturing share of gross domestic product in Nigeria (in percentage); MVA = manufacturing value added, measures in Naira; INV= total investment which is the total sum of foreign direct investment and domestic investment, measures in Naira; RGDPGR = real GDP growth rate, proxy for economic growth rate, measures in percentage; HUC = human capital, measure in percent of skilled labour force to total labour force, is also a proxy of technology; CPS = credit to private sector in measures naira; and INFRA = infrastructure, proxy by electricity consumption per kilowatt.

The model in equation (1) above can be transformed econometrically as follows:

$$MANEMP = \alpha_0 + \alpha_1 MANGDP + \alpha_2 MVA + \alpha_3 INV + \alpha_4 RGDPGR + \alpha_5 HUC + \alpha_6 CPS + \alpha_7 INFRA + U_{t1} \qquad 2$$

α_0 *is the constant term*;
$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6,$ *and* α_7 *are respective parameters of the independent variables of the employment equation*;
U_{t1} is the error term which captures all the other factors that may affect manufacturing employment not captured in the manufacturing-employment equation. The expected signs of these parameters are $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6, \alpha_7, > 0,$ *that is postive relationship* .

Estimation procedures

Several procedures were used to estimate the study's specified equations. The procedures included unit root test, cointegration test, Granger causality test, and the estimation of an Autoregressive Distributed Lag (ARDL) model. This study employed the unit root test to determine the stationarity of the numerous macroeconomic variables examined. The examination is conducted for two primary purposes. To circumvent the problem of spurious regression, the unit root test is conducted first. Second, a stationary time series is a fundamental assumption underlying the application of the causality test. To detect the stationarity of the variables, the Augmented Dickey–Fuller (ADF) and Phillip-Perron (PP) tests are used. Therefore, employing the Augmented Dickey and Fuller (1979), the following equation is estimated:

$$\Delta y_t = \alpha_0 + \alpha_1 \Delta y_{t-1} + \sum_{j=1}^{j} \beta_i \Delta y_{t-1} + \varepsilon_t . \qquad 3$$

Where: $\Delta y_t = y_t - y_{t-1}$ is the difference of series y_t; $\Delta y_{t-1} = Y_{t-i} - y_{t-2}$ is the first difference of y_{t-1}
e_t =Stochastic error term; α_0, α_1 and β_i are the parameters to be estimated.

Vol.12, No.2, pp.1-23, 2024
Print ISSN: 2055-608X (Print),
Online ISSN: 2055-6098(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

If $\alpha_1 = 0$, the null hypothesis of non – stationary is accepted. But if $\alpha_1 < 0$ and statistically significant, the null hypothesis of non-stationarity is rejected.

Similarly, using the Phillips-Perron (1988) test, the following equation is also specified as:

$$y_t = \beta_0 + \phi y_{t-1} + \upsilon_t \tag{4}$$

Where: β_o and ϕ are parameters to be estimated; and V_t is the random error term. The null hypothesis using PP test requires that if $\phi = 1$, then the series is non stationary or has a unit root but if $\phi < 1$, then the series is stationary.

The co-integration test entails constructing a co-integration equation and testing for the presence or absence of co-integration between series of the same order of integration. Co-integration between variables implies that equilibrium or a long-run relationship exists between a set of time-series variables, provided that the series are integrated in the same sequence. A lack of co-integration indicates that these variables have no long-run relationship: in theory, they can drift arbitrarily far apart (Dickey et al., 1991). The VAR causality/Block Exogeneity Wald test was employed to investigate the long-run equilibrium relationship among the selected macroeconomic variables in the model. The vector auto regression model of order *p* (VAR (*p*)) is constructed as a following equation:

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^{k-1} \Gamma_i \Delta y_{t-i} + C + \varepsilon_t \tag{5}$$

Where ΔYt is (n x 1) vector of macroeconomic variables in period t, μ is (n x 1) vector of constant terms, Γi (i = 1…k-1) represents the (n x n) coefficient matrix of short-run dynamics, Π is the n x n long term impact matrix, and $\varepsilon 1t$ is (n x 1) vector of error term and it is independent of all explanatory variables. The co- integration test is conducted using trace test and maximum eigene value test. The null hypothesis and alternative hypothesis for the co-integration are stated as follows: H_O: $\beta_i = 0$ (There is no long – run relationship, hence no co-integration); H_A: $\beta_i \neq 0$ (there is long – run relationship, hence there is co-integration).

The study adopted the autoregressive distributed lag (ARDL) modelling technique as its main technique of estimation. This estimation technique was chosen because the time series properties of the variables met the requirements for its adoption, which is that variables must not be stationary after the second difference but be of mixed stationarity at the level and after the first difference. Therefore, for an adjustment error correction, the sign of the residual coefficient must be negative and statistically significant. In this regard, the greater the absolute value of the coefficient, the quicker we reach equilibrium in the long run. The short – run relationship based on equations 2 is:

International Journal of Developing and Emerging Economies
Vol.12, No.2, pp.1-23, 2024
Print ISSN: 2055-608X (Print),
Online ISSN: 2055-6098(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

$$\Delta MANEMP_t = \alpha_0 + \sum_{i=1}^{j} \alpha_{1i} \Delta MANGDP_{t-i} + \sum_{i=1}^{j} \alpha_{2i} \Delta \log(MVA)_{t-i} + \sum_{i=1}^{j} \alpha_{3i} \Delta \log(INV)_{t-i}$$
$$+ \sum_{i=1}^{j} \alpha_{4i} \Delta RGDPGRP)_{t-i} + \sum_{i=1}^{j} \alpha_{5i} \Delta \log(HUC)_{t-i} + \sum_{i=1}^{j} \alpha_{6i} \Delta \log(CPS)_{t-i} + \sum_{i=1}^{j} \alpha_{7i} \Delta \log(INFRA)_{t-i} + \phi ECM_{t-i} + U_t$$

The ECM is error correction factor of the equation representing the speed of adjustment.

RESULTS AND DISCUSSION OF FINDINGS

Presentation of the correlation matrix

The correlation matrix of the manufacturing export -employment equation results is presented in table 1 and the results revealed that there a strong negative correlation between MANEMP and log (MANEX), log (CPS) log (HUC), log (INFRA), log (INV) and RGDPGR, and respectively. This negative correlation or association is not in line with relevant theoretical expectations because their expected relationship is positive.

TABLE 1

Correlation matrix of the manufacturing -employment equation

	MANEMP							
MANEMP	1							
MANGDP	0.4851	1						
LOG(MVA)	-0.6491	0.1913	1					
LOG(HUC)	-0.7755	-0.3269	0.7603	1				
LOG(INFRA)	-0.7174	0.0094	0.8683	0.7937	1			
LOG(INV)	-0.7825	-0.2526	0.8425	0.9797	0.8235	1		
RGDPGR	-0.4673	-0.4864	0.1972	0.4418	0.3826	0.3665	1	
LOG(CPS)	-0.8085	-0.2030	0.8916	0.9608	0.8676	0.9871	0.3783	1

Source: computation by Author, 2023, with the assistance of E-view 9.

Unit root test results

The unit root result is presented in Table 2. The table shows both the ADF and PP unit root test results for all the variables, and it shows that some of the variables were stationary at level while others were stationary after first difference. The Kwiatkowski-Philip-Schmidt-Shin (KPSS) (Confirmatory test) test was used on the variable that ADF and PP test results were conflicting. Basically, as shown in table 2, the unit root test result shows that log (INFRA) and RGDPGR variables were stationary at level using both ADF and PP unit root test methods. The unit root test result shows that log (CEM), log (FBT) log (HUC), log (INV), log (MANEX), log (MVA), log (TAF), log (WWP), MANGDP, log (CPS) variables were not stationary at level but became stationary after first difference using both ADF and PP unit root test methods. MANEMP variable unit root test result using ADF and PP unit root test methods was conflicting, and so to settle the conflicting results, the KPSS unit root test method was introduced, and the results shows that the MANEMP variable was stationary at level. The order of integration of the variables in table 5.5 using ADF and PP unit root test showed a mixed stationarity and this justified the use of the ARDL estimation techniques in this study.

TABLE 2
Unit root test results: ADF and PP**:** summarized result of the unit root test results**;** 1981-2022

Variable	At level		After first difference		Remark
	ADF	PP	ADF	PP	
Log(INFRA)	-3.7580	-4.0223	-	-	I(0)
	(0.0294)	(0.0156)			
Log(INV)	-1.1984	-1.6755	-4.4236	-4.23447	I(1)
	(0.8976)	(0.7440)	(0.0057)	(0.0070)	
Log(MVA)	-3.0788	-2.1126	-4.4487	-4.0898	I(1)
	(0.1251)	(0.5237)	(0.0054)	(0.0134)	
MANEMP	-2.1163	-1.2356	-3.6776	-3.0001	I(1)
	(0.5205)	(0.8895)	(0.0360)	(0.1445)	
MANGDP	-1.9249	-1.7659	-7.8457	-7.8457	I(1)
	(0.0312)	(0.7028)	(0.0001)	(0.00001)	
RGDPGR	-3.7406	-4.1496	-	-	I(0)
	(0.0312)	(0.0113)			
Log(CPS)	0.0664	0.0328	-4.0554	-4.0006	I(1)
	(0.9994)	(0.9954)	(0.0145)	(0.0166)	

Figures in brackets are corresponding probability values of ADF and PP statistics.
NE stands for "not estimated", this is for variables whose series was stationary at level and there was no need to go further.

Source: computation by Author, 2023, with the assistance of E-view 9.

Optimal lag selection

This study used VAR lag order selection criteria to determine the lag length. The result is shown in Table 3, and using the Akaike Information Criteria (AIC), the result showed that the optimal lag selection for the manufacturing -employment equation is three (3).

International Journal of Developing and Emerging Economies
Vol.12, No.2, pp.1-23, 2024
Print ISSN: 2055-608X (Print),
Online ISSN: 2055-6098(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

TABLE 3

Optimal lag selection Results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	13.4213	NA	1.05E-10	-0.278	0.06323	-0.1556
1	293.612	431.063	1.71E-15	-11.365	-8.29324*	-10.263
2	375.838	92.7679	1.04E-15	-12.299	-6.4982	-10.218
3	505.767	93.28198*	1.43e-16*	-15.680*	-7.1492	-12.61945*

The Bounds test (co-integration) result

Table 4 shows the results of the Bounds test result for the manufacturing-employment equation. The F-statistics value of 4.54 is greater than the critical value of 3.5 of the upper bound at the 5 per cent level of the upper bounds. This means that the null hypothesis of no long-run relationship in the manufacturing-employment equation is rejected, and the alternative hypothesis of the existence of a long-run relationship in the variables of the manufacturing-employment equation cannot be rejected. This means that at a 5 per cent significance level, there is a cointegration or long-run relationship among the variables in the manufacturing-employment equation.

TABLE 4

Bounds test result for the manufacturing -employment equation

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	4.541410	7
	Critical Value Bounds	
Significance	I0 Bound	I1 Bound
10%	2.03	3.13
5%	2.32	3.5
2.50%	2.6	3.84
1%	2.96	4.26

Source: computation by Author, 2023, with the assistance of E-view 9.

ARDL error correction and short run parsimonious results

The manufacturing-employment equation short-run dynamics result (ECM) is shown in Table 5a. The short-run coefficient result of the current period of log (MANGDP) is 0.1439, with its corresponding probability value of 0.1014. This shows a positive impact of MANGDP on MANEMP in the short-run, but this is not statistically significant at a five per cent level of significance given that the corresponding probability value of 0.1014 is greater than the five percent level of significance. This result implies that a one percent increase in MANGDP will lead to about 0.0014 percent increase in MANEMP, all other things being equal.

The short-run coefficient result of the current period of log (MVA) is 0.0916, with its corresponding probability value of 0.9305. This shows a positive impact of MVA on MANEMP in the short run, but this is not statistically significant at a five per cent level of significance given that the corresponding probability value of 0.9305 is greater than the five percent level of significance. This result implies that a one percent increase in MVA will lead to about 0.00092 percent increase in MANEMP, all other things being equal. The short-run coefficient results of the lag one value of log (MVA (-1)) is 2.0423 with its corresponding probability value of 0.1102. This shows a positive but not statistically significant impact of lag one period value of log (MVA) on MANEMP at a five per cent level of significance in the short-run. This means that a one percent increase in lag one period of log (MVA) will lead to about a 0.024 percent increase in current MANEMP, all other things being equal. However, this impact is not statistically significant because the probability value is greater than a five percent significance level.

Table 5a

ARDL error correction and short run parsimonious results

Dependent Variable: MANEMP
Selected Model: ARDL (1, 1, 3, 1, 0, 3, 1, 0)

Variable	Coefficient	Standard error	t-Statistic	Probability
D(MANGDP)	0.1439	0.0840	1.7130	0.1014
Dlog(MVA)	0.0916	1.0375	0.0882	0.9305
Dlog(MVA(-1))	2.0423	1.2244	1.6680	0.1102
Dlog(MVA(-2))	-1.3908	0.7276	-1.9116	0.0697
Dlog(CPS)	0.7927	0.4430	1.7893	0.0880
Dlog(HUC)	-5.8964	1.1433	-5.1572	0.0000
Dlog(INFRA)	0.7705	0.6403	1.2034	0.2422
Dlog(INFRA(-1))	0.6154	0.7200	0.8548	0.4023

Dlog(INFRA(-2))	1.8783	0.5952	3.1559	0.0048
Dlog(INV)	0.5359	0.5947	0.9011	0.3777
D(RGDPGR)	0.0021	0.0089	0.2393	0.8132
ECT(-1)	-0.2985	0.1379	-2.1639	0.0421

Diagnostic test results

Adjusted R-squared	0.9818	Breusch-Godfrey Serial Correlation LM test observed R-Squared	4.1427
F-statistic	121.6449	Prob. Chi-Square	(0.0569)
Prob(F-statistic)	(0.0001)	Heteroskedasticity Test: Breusch-Pagan-Godfrey observed R-Squared	4.9837
Durbin-Watson Statistic	(1.9896)	Prob. Chi-Square	(0.2267)

Source: computation by Author, 2023, with the assistance of E-view 9.

The short-run coefficient results of the lag two log value (MVA (-2)) is -1.3908 with its corresponding probability value of 0.0697. This shows a negative but not statistically significant impact of the lag two-period value of log (MVA) on MANEMP at a five per cent level of significance in the short run. However, the coefficient is significant at 10% level of significance – the P-value (0.0697) is less than 0.10(10%), which is acceptable in social sciences research for the rejection of null hypothesis. This means that a one percent increase in lag two periods of log (MVA) will lead to about a 0.014 percent decrease in current MANEMP, all other things being equal, and this impact is not statistically significant because the probability value is greater than a five percent level of significance.

The short-run coefficient result of the current period of log (CPS) is 0.7927, with its corresponding probability value of 0.0888. This shows a positive relationship between log (CPS) and MANEMP in the short run, but this is not statistically significant given that the corresponding probability value is greater than a five percent significance level. It is significant at 10% level of significance. This result implies that a one percent increase in log (CPS) will lead to about a 0.0079 percent increase in MANEMP, all other things being equal. Judging from the probability value, this impact is not statistically significant at a five per cent level of significance.

The short-run coefficient result of the current period of log (HUC) is -5.8964 with its corresponding probability value of 0.0001. This shows a negative relationship between log (HUC) and MANEMP in the short run. This is statistically significant, given that the corresponding probability value is less than a one percent significance level. This result implies that a one percent

International Journal of Developing and Emerging Economies
Vol.12, No.2, pp.1-23, 2024
Print ISSN: 2055-608X (Print),
Online ISSN: 2055-6098(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

increase in log (HUC) will lead to a 0.059 percent decrease in MANEMP, all other things being equal. Judging from the probability value, this impact is statistically significant at a one per cent significance level.

The short-run coefficient result of the current period of log (INFRA) is 0.7705, with its corresponding probability value of 0.2422. This shows a positive relationship between log (INFRA) and MANEMP in the short run, but this is not statistically significant given that the corresponding probability value is greater than a five percent significance level. This result implies that a one percent increase in log (INFRA) will lead to a 0.77 percent increase in MANEMP, all other things being equal. Judging from the probability value, this impact is not statistically significant at a five per cent level of significance. The short-run coefficient results of the lag one value of log (INFRA (-1)) is 0.6154 with its corresponding probability value of 0.4023. This shows a positive but not statistically significant impact of lag one period value of log (INFRA) on MANEMP at a five per cent level of significance in the short-run. This means that a one percent increase in lag one period of INFRA will lead to about 0.0062 percent increase in current MANEMP, all other things being equal. However, this impact is not statistically significant because the probability value is greater than a five percent significance level. The short-run coefficient results of the lag two log value (INFRA (-2)) is 1.8783 with its corresponding probability value of 0.0048. This shows a positive and statistically significant impact of the lag two-period value of log (INFRA) on MANEMP at a five per cent significance level in the short run. This means that a one percent increase in lag two periods of INFRA will lead to about a 0.019 percent increase in current MANEMP, all other things being equal. This impact is statistically significant because the probability value is less than a five percent significance level.

The short-run coefficient result of the current period of log (INV) is 0.5359, with its corresponding probability value of 0.3777. This shows a positive relationship between log (INV) and MANEMP in the short run, but this is not statistically significant given that the corresponding probability value is greater than a five percent significance level. This result implies that a one percent increase in INV will lead to about 0.00554 percent increase in MANEMP, all other things being equal. Judging from the probability value, this impact is not statistically significant at a five per cent level of significance.

The short-run coefficient result of the current period of RGDPGR is 0.0021, with its corresponding probability value of 0.8132. This shows a positive relationship between RGDPGR and MANEMP in the short run, but this is not statistically significant given that the corresponding probability value is greater than a five percent significance level. This result implies that a one percent increase in RGDPGR will lead to a 0.0021 percent increase in MANEMP, all other things being equal. Judging from the probability value, this impact is not statistically significant at a five per cent level of significance.

International Journal of Developing and Emerging Economies
Vol.12, No.2, pp.1-23, 2024
Print ISSN: 2055-608X (Print),
Online ISSN: 2055-6098(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development -UK

The error correction coefficient, otherwise called the speed of adjustment, is -0.2985 with a corresponding probability value of 0.0421. This is a correct sign and statistically significant because the probability value is less than a 5% significance level. This means that about 29.85 percent of the disequilibrium in the short run is corrected in the long run. This is a very poor speed of adjustment from the short-run disequilibrium to the long-run. The correctness of the sign and the statistical significance of the error correction coefficient confirm the existence of a long-run relationship between the dependent and the independent variables.

The manufacturing-employment equation passed the diagnostic tests, as shown in Table 5. The adjusted R-squared of the manufacturing-employment equation is 0.9818. This means that about 98.18 per cent variation in the dependent variable, MANEMP, was explained by the variations of the independent variables [(MANGDP, log(MVA), log(CPS), log(HUC), log(INFRA), log(INV), and RGDPGR). This shows that the manufacturing-employment equation has a good fit. Also, the F-statistics for the manufacturing-employment equation is 121.64 with its corresponding probability of 0.0001. This shows that all the independent variables have a significant joint impact on MANEMP, and this is equally good. The Durbin-Watson (D-W) statistics for the manufacturing-employment equation is 1.9896, which is approximately two and, by the rule of thumb, shows no presence of autocorrelation in the estimated model. Breusch-Godfrey for Serial Correlation LM test observed R-Squared is 4.1427 with a chi-Square probability of 0.0569. This is not statistically significant at five per cent, meaning there is no serial correlation in the estimated model. Heteroskedasticity Test: Breusch-Pagan-Godfrey observed R-Squared is 4.9837 with a chi-Square probability of 0.2267. This is not statistically significant at a five per cent significance level, and it shows the presence of homoscedasticity (equal spread or equal variance) in the estimated model.

Table 5 shows the long-run equation of the manufacturing-employment equation. The result of the long-run coefficient of MANGDP is 1.0893, with a corresponding probability value of 0.0053. This shows a positive impact of MANGDP on MANEMP, and the result is statistically significant because the corresponding probability value is less than a 5 percent level of significance. This means that a one percent increase in MANGDP will lead to about a 0.011 percent increase in MANEMP in Nigeria in the long run, all other things being equal.

The result of the long run coefficient of log (MVA) is -3.5098 with a corresponding probability value of 0.2850. This shows a negative impact of log (MVA) on MANEMP. However, the result is not statistically significant because the corresponding probability value is greater than the 5 per cent significance level.

TABLE 5b

ARDL long run results for the manufacturing -employment equation

	Dependent variable: MANEMP			
Variable	Coefficient	Standard error	t-Statistic	Probability
MANGDP	1.0893	0.3503	3.1094	0.0053
log(MVA)	-3.5098	3.1994	-1.0970	0.2850
log(CPS)	0.8227	1.6709	0.4924	0.6275
log(HUC)	-19.7560	9.1718	-2.1540	0.0430
Log(INFRA)	-12.2337	3.7973	-3.2217	0.0041
log(INV)	4.5908	1.3137	3.4946	0.0022
RGDPGR	0.0071	0.0295	0.2419	0.8112
Constant	143.2602	68.0671	2.1047	0.0475

Source: computation by Author, 2023, with the assistance of E-view 9.

This means that a one percent increase in MVA will lead to about a 0.035 percent decrease in MANEMP in Nigeria in the long run, all other things being equal.The long-run coefficient of the log (CPS) result is 0.8227 with a corresponding probability value of 0.6275. This shows a positive impact of log (CPS) on MANEMP. However, the result is not statistically significant because the corresponding probability value is greater than the 5 per cent significance level. This means that a one percent increase in CPS will lead to about 0.0082 percent increase in MANEMP in Nigeria in the long run, all other things being equal.

The result of the long-run coefficient of log (HUC) is -19.7560, with a corresponding probability value of 0.0430. This shows a negative impact of log (HUC) on MANEMP, and the result is statistically significant because the corresponding probability value is less than a 5 per cent significance level. This means that a one percent increase in HUC will lead to an about 0.20 percent decrease in MANEMP in Nigeria in the long run, all other things being equal.

The result of the long-run coefficient of log (INFRA) is -12.2337, with a corresponding probability value of 0.0031. This shows a negative impact of log (INFRA) on MANEMP, and the result is statistically significant because the corresponding probability value is less than a 5 per cent significance level. This means that a one percent increase in INFRA will lead to about a 0.12 percent decrease in MANEMP in Nigeria in the long run, all other things being equal.

The result of the long-run coefficient of log (INV) is 4.4908, with a corresponding probability value of 0.0022. This shows a positive impact of log (INV) on MANEMP, and the result is statistically significant because the corresponding probability value is less than a 5 percent level of significance. This means that a one percent increase in INV will lead to about a 0.045 percent increase in MANEMP in Nigeria in the long run, all other things being equal.

The result of the long-run coefficient of RGDPGR is 0.0071, with a corresponding probability value of 0.8112. This shows that there is a positive impact of RGDPGR on MANEMP. However, the result is not statistically significant because the corresponding probability value is less than a 5 per cent significance level. This means that a one percent increase in RGDPGR will lead to a about 0.0071 percent increase in MANEMP in Nigeria in the long run, all other things being equal.

CONCLUSION AND RECOMMENDATIONS

The study was undertaken to examine manufacturing sector development and employment in Nigeria. The Nigerian economy has been gradually diversifying from oil into manufacturing and other sectors; the manufacturing sector development is expected to generate employment opportunities and help minimize the social repercussion of the lack of employment opportunities for the teeming Nigerian unemployed.

The study found a positive impact of MANGDP on MANEMP in both the short-run and the long-run periods. However, this impact of MANGDP on MANEMP was only statistically significant in the long run at a five per cent level of significance. In contrast, it was not statistically significant in the short run at a five per cent significance level. The positive impact of MANGDP on MANEMP implies that manufacturing sector development will have a positive effect on manufacturing employment which means that as the manufacturing sector is developed and diversified, the sector will be able to generate employment opportunities for Nigeria. Though it may not be one of the main drivers of manufacturing employment in the short run, in the long run, it is a significant determinant of manufacturing employment, meaning that the development of the manufacturing sector may be one of the key strategies for the creation of employment opportunities in Nigeria. This study is in line with Alifa et al. (2021), whose study found that manufacturing units and production value positively affect employment; Atan and Effiong (2020) manufacturing output to have a negative effect on youth unemployment both in the short-run and in the long-run. This implies that increasing the volume of manufacturing activities will reduce youth unemployment, and also Meyer and McCamel (2017) study found that manufacturing increases GDP and creates jobs.

The positive and statistically significant impact of MANGDP on MANEMP at a five percent level of significance in the long run calls for the fiscal authorities to make the development and diversification of the manufacturing sector one of its top long-term policy strategies for the creation of employment for Nigeria. This finding highlights the importance of promoting and supporting the growth of the manufacturing sector in Nigeria to reduce unemployment rates and improve the country's overall economic well-being. It also suggests that policies aimed at attracting foreign investment in this sector could positively impact employment generation. This can be accomplished by providing incentives to the operators of the manufacturing sector, such as import waivers on essential imported inputs, providing and guaranteeing large commercial trading businesses to enter the manufacturing of their products through licensing, facilitating and acting as surety in franchise agreements with foreign manufacturers, and any other incentive to help lower the manufacturing sector's cost of production. Therefore, the government must prioritize the development of the manufacturing sector by providing necessary support and incentives to attract more investors and increase local production, which will lead to job creation and economic growth for Nigeria. This could also include investing in infrastructure, improving access to credit, and implementing policies that promote technological innovation and skill development in the manufacturing industry.

REFERENCES

Adeniyi, A. (2021). Manufacturing Output Growth and Employment in Nigeria. *International Journal of Finance & Banking Studies*, 10 (2), 111-119.

Ajeigbe O. M., Olomola P. A. & Adeleke O. K. (2021). Dynamics of Manufacturing Sector Development and Youth Unemployment in Africa. *International Journal of Research and Innovation in Social Science (IJRISS), 5(7),599-606.*

Akpunonu, U., & Orajaka, U. P. (2021). Effect of monetary policy on industrial growth in Nigeria. *International Journal of Entrepreneurship and Business Innovation*, *4*(1), 47-60.

Alifa, H. N., Kusumaningrum, E. B., & Maharani, D. P. (2021). Industri Mikro dan Kecil: Peran Terhadap Perekonomian Daerah Dan Penyerapan Tenaga Kerja. *Surplus: Jurnal Riset Mahasiswa Ekonomi, Manajemen, dan Akuntansi*, *1*(1), *25-38.*

Altaf, N. (2016). Economic value added or earnings: What explains market value in Indian firms? *Future Business Journal*, *2*(2), *152-166.*

Apken-Ageh, E.A. (2020). An Appraisal of the Socia-Economic Impact of Privitization on Rural Communities in Nigeria: A Focus on Benue Cement Company Gboko (Dangote Cement PLC). *World Wide Journal of Multidisciplinary Research and Development*, 6(10), 27-34.

Atan, J.A. & Effiong, U.E (2020). Industrialization and Youth Unemployment in Nigeria: An Autoregressive Distributive Lag (ARDL) Approach. *International Journal of Business and Economics Research*, *9(4), 334-344.*

Banjoko, S. A. (2009). *The Nigerian Manufacturing Sector: Bumpy Past and Shaky Future what Options for survival?* University of Lagos Inaugural Lecture series.

Bhidé, A. (2009). The venturesome economy: How innovation sustains prosperity in a more connected world. *Journal of Applied Corporate Finance*, *21*(1), 8-23.

Central Bank of Nigeria (2021). *Statistical Bulletin,20*. Abuja; Research Department. Central Bank of Nigeria.

Charles, K. K., Hurst, E., & Schwartz, M. (2019). The transformation of manufacturing and the decline in US employment. *NBER Macroeconomics Annual*, *33*(1), 307-372.

Dauda, R. S., & Ajeigbe, O. M. (2021). Sectoral Analysis of Employment Intensity of Growth in Nigeria. *Global Business & Economics Anthology*, *1*(13), 87-99.

David, O., Umeh, J. C., & Ameh, A. A. (2010). The effect of exchange rate fluctuations on the Nigerian manufacturing sector. *African journal of business management*, *4*(14), 2994-2998.

Felipe, J., Mehta, A., & Rhee, C. (2019). Manufacturing matters… but it's the jobs that count. *Cambridge Journal of Economics*, *43*(1), 139-168.

Haraguchi, N., Cheng, C. F. C., & Smeets, E. (2017). The importance of manufacturing in economic development: has this changed? *World Development*, *93(1)*, 293-315.

Igwemma, A. A and Nwoko, I A (2007). An Evaluation of Nigerian Industrial Sector and Economy. The Enterprise, 9(2), 238-253.

Jansen, M., & Lee, E. (2007). *Trade and employment: challenges for policy research: a joint study of the International Labour Office and the Secretariat of the World Trade Organization*. Geneva: International Labour Organization.

Keynes, J. M. (1936). The general theory of employment. *The quarterly journal of economics*, *51*(2), 209-223.

Oluranti, O.I. & Osabuohien, E. S.C. (2010). Globalization and Employment Generation in Nigeria's Manufacturing Sector (1990-2006). *European Journal of Social Sciences ,12(4), 581-593.*

Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. *Economic development quarterly, 14*(1), 15-34.

Rodrik, D. (2016). Premature deindustrialization. *Journal of economic growth*, *21*, 1-33.

Rubmann, M., Lorenz, M., Gerbert, P., Waldner, M., Justus, J., Engel, P., & Harnisch, M. (2015). Industry 4.0: The future of productivity and growth in manufacturing industries. *Boston consulting group*, *9*(1), 54-89.

Simbo A. Banjoko., Iwuji, I. I. & Bagshaw, K. (2012). The Performance of the Nigerian Manufacturing Sector: A 52-Year Analysis of Growth and Retrogression (1960-2012). *Journal of Asian Business Strategy, 2(8), 177 -191*.

Simon, O., & Awoyemi, O. V. (2010). Manufacturing capacity Utilization and industrial development in Nigeria: An assessment (1976-2005). *An International Multi-Disciplinary Journal, 4 (2), 265-275.*

Sola, O., Obamuyi, T. M., Adekunjo F. O. & Ogunleye, E. (2013). Manufacturing performance in Nigeria: Implication for sustainable development. *Asian Economic and Financial Review, 3(9), 11-95.*

Tizhe, A.N & Umar S.S, & Abubakar, I. (2022). Evaluation of manufacturing sector performances and its employment creation in Nigeria. *Asian Online Journal Publishing Group*, 9(1), 6-12.