

Impact of Labour Market and Manufacturing Sector on Economic Growth in Nigeria

***Joseph Olufemi OGUNJOBI**

Department of Economics, Landmark University, Omu-Aran, Nigeria

Olorunshogo Adeleke OYENIYI

Department of Economics, Landmark University, Omu-Aran, Nigeria

Omowonuola Fadekemi OLUGA

Department of Economics, Landmark University, Omu-Aran, Nigeria

[*Correspondence: +2348030814325; ogunjobi.olufemi@lmu.edu.ng](mailto:ogunjobi.olufemi@lmu.edu.ng)

DOI: 10.56201/ijefm.v10.no1.2025.pg149.157

Abstract

This study examines the impact of the labour market and the manufacturing sector on Nigeria's economic growth from 1993 to 2023. Time series data was used while Solow-Swan growth model and Dynamic Ordinary Least Square (DOLS) analysis were adopted for the processing of the data. The study investigates the relationship between economic growth and key variables, such as labour market participation, manufacturing output, gross fixed capital formation, inflation, and interest rates. The findings reveal that the labour market, manufacturing output, and gross fixed capital formation positively and significantly influence Nigeria's real GDP, indicating their pivotal roles in driving economic growth. Conversely, inflation and interest rates exhibit a negative but significant effect on economic growth. The study highlights the need for targeted policies to enhance workforce skills, increase credit accessibility for small and medium-sized enterprises, and foster public-private sector collaborations to boost manufacturing and economic growth. These insights provide valuable recommendations for policymakers aiming to achieve sustainable economic development in Nigeria.

Key words: Labour market, manufacturing output, inflation, economic growth

1. Introduction

Nigeria's economy prior to independence was driven by agriculture, trade and export in agricultural products due to its weak real industrial sector, but after independence, the economy was centered more on agro-allied industrialization (Ogundipe, 2022). Nigeria is a country blessed with abundant natural resources and hence classified as an affluent country (Okoh et al., 2023) but the abundant resources were not adequately tapped especially on the agro-allied outputs which would have provided enough raw materials for the industrial sector especially cocoa, coffee, cotton and rubber. The efforts of the government to increase industrial activity and capacity utilization have not been achieved, there has been a decline in the manufacturing output in recent years due

to poor energy generation and supply, inadequate raw materials supply among others. (Ogundipe, 2022). The manufacturing sector has been claimed to encourage economic growth and increase living standards (Babasanya et al. 2020), the sector can contribute to the macroeconomic policies of the countries through job creation, investment, provision of goods and services, encourages innovation as well as human capital development. It encourages and develops marketing sector, it reduces a country's imports, increases exportation and helps in achieving a sustainable foreign exchange earnings and policies. However, the sector's transformation, driven by technological change and globalization, has had significant implications for the labor market and overall economic outcomes. The labour market also plays a vital role in increasing output and its regulator can impact the manufacturing sector on economic growth through wage adjustment and labour reallocation. The decline in this sector began in the 1980s during the global economic meltdown which led to the closure of many industries (Otalú and Adneru, 2015). This had led to high rate of importation of finished goods, capital flight, unemployment, deficit balance of trade and payment for decades in Nigeria. However, in their contribution, Charles et al (2019) opined that the manufacturing sector has undergone significant transformations in recent years, with implications for the labor market and overall economic growth. Shocks to the manufacturing sector can have larger labor market effects due to local spillovers and the high costs of cross-region mobility. Furthermore, the manufacturing sector has historically been a significant employer for less educated Nigerian, especially men, which has implications for broader labor market trends and economic outcomes. At the same time, according to Charles et al, the decline in manufacturing employment, particularly among less educated workers, has had broader implications for the labor market and economic outcomes.

Hallward-Driemeier and Nayyar (2017) concluded that the impact of technological advancement and globalization on the manufacturing sector is complex, according to them, these two factors intersect to affect the geography of production, the types of jobs being created, and the extent of productivity growth. Consequently, understanding the dynamics between the labor market, manufacturing sector, and economic growth requires a holistic approach that considers these interconnected factors. According to Hallward and Nayyar, one of the key impacts of the manufacturing sector on economic growth is its ability to drive productivity and innovation. The manufacturing industry is more likely to attract capital, know-how, and intermediate goods, which can then be used to produce goods for both domestic and international markets. This can lead to a process of structural change, where productivity tends to be higher in the manufacturing sector compared to other sectors, ultimately contributing to economic growth. According to Camino-Mogro (2021), the relationship between the labour market, manufacturing sector, and economic growth has been a subject of extensive research and debate. Traditionally, the manufacturing industry has been seen as a driver of economic growth, as it produces goods with added value that can boost productivity, innovation, and internationalization. In conclusion, the impact of the labor market and manufacturing sector on economic growth is a complex and multifaceted issue.

Understanding how these factors work provide information to policymakers to increase Nigeria's economic growth. This paper seeks to achieve the following objectives;

- i. To examine the impact of the labour market on economic growth in Nigeria.

- ii. To evaluate the effect of the manufacturing sector on economic growth in Nigeria.

2. Literature Review

2.1 Conceptual Review

Labour market is the place where workers and employees interact with each other. It refers to the supply of and demand for labour. A sufficient labour supply is influenced by certain factors such as population expansion as result of high birth rates and low death rates, excess labour from casual jobs and release of female workers from their jobs (Rada et al., 2022). This encourages capitalist to maintain steady wages in a labour market (Onye et al., 2023). Manufacturing sector is a major sector of any economy which involves the processing and refining raw materials to finished goods. According to Okoh et al., manufacturing sector is the production of goods through the use of labour, machinery, biological and chemical components. The manufacturing sectors determines the economic efficiency in a modern economy.

2.2 Theoretical Review

The effect labour market and manufacturing sector on economic growth in Nigeria has come to the attention of various researchers. There are several theories associated with labour market and manufacturing performance on economic growth some of which may include the Human Capital theory and the Efficiency Wage theory; these theories are directly linked to this research work. The human capital theory posits that firms have much to gain when searching for productive human capital and adding to the already existing human capital of employees. This theory was formulated by Gary Becker and Theodore Schultz in the 1960s. They pointed out that education and training were investments that could add to productivity. The Efficiency Wage Theory focuses on the wage level paid to workers above the market rate to retain a skilled and efficient workforce. The theory states that an employer must pay its workers high enough so that workers are incentivized to be productive and that highly skilled workers do not quit. This theory explains why firms overpay for labour by arguing that these higher wages increase the productivity and profitability of the firm in the long run. This theory came to play as far back as 18th century when Adam Smith identified wage inequality where workers in some industries are paid more than others based on the level of trustworthiness required.

2.3 Empirical Literature

Rahman (2018), examined the impact of labour force participation on economic growth in South Asian Countries; Bangladesh, India, Pakistan and Sri Lanka. Panel data collected from the World Bank Database and other internet sources were used, the collected data was from 1990 and 2017. Also, panel regression analysis was used to process the data. The result of the findings showed that an increasing labour force participation in these countries have a positive and significant impact on GDP. Afolabi and Laseinde (2019), assessed the impact of manufacturing sector output on economic growth in Nigeria from 1986 to 2016. Secondary data were used and the autoregressive distributed lag (ARDL) model was adopted alongside granger causality. The result of the analysis showed that manufacturing capacity utilization and manufacturing output has a positive effect on

economic growth. Also, a unidirectional relationship was found between manufacturing capacity utilization and manufacturing output economic growth.

In their study, Moyo and Jeke (2019), looked at the effect manufacturing sector on economic growth in thirty-seven African countries. The study used Panel data estimation technique and the system generalized method of moment (GMM) model for the period 1990-2017. The result showed that manufacturing output has a positive effect on economic growth. It therefore recommends policies that would boost manufacturing output in Africa countries. Ogundipe and Olarewaju (2020), studied the effect of labour productivity on manufacturing output in ECOWAS countries from 1999 to 2019 using the static panel regression analysis. It was found that labour productivity significantly influence manufacturing sector in ECOWAS positively. The study advised the various governments of the regional Bloc to increase their efforts on human capital development especially on ICT professionals. Babasanya, Maku and Amaefule (2020) studied the role of labour force and the national savings on the manufacturing sector output in Nigeria between 1985 and 2019. The study used time series data and adopted the vector error correction model (VECM) to process the data. The result of the findings revealed that national savings and labour force have a long run positive effect on manufacturing sector output but a negative effect was found between exchange rate and inflation rate on manufacturing output in the long-run. Yakubu, Akanegbu and Jelilov (2020), analyzed the effect of labour force participation had on Nigeria's economic growth. The data for the study was for a period of 1990 and 2017 using the Johanssen's Cointegration and Vector Error Correction Model. The study found that a long run relationship exists between the variables as well as a long-run causality between labour force participation and gross fixed capital formation to real gross domestic product.

Cung and Hung (2020), the study examined the impact of labour force on economic growth in Vietnam using time series data from 1998-2018. Correlation and Regression analysis were used to process the data and to achieve its desired objectives. The result showed that labour force and foreign direct investment have a positive influence on economic growth at 1% significance level while exportation had a positive effect on economic growth at 10% significance level and a negative effect of inflation rate on economic growth at 1% significance level. In addition, Sallam (2021), studied the role of the manufacturing sector in promoting economic growth in the Saudi Arabia. This study was carried out using annual time series data from 1980 to 2018. The Cointegration approach and Vector Error Correction Model were used to achieve its objective. The result shows a bi-directional causal relationship between the manufacturing sector and economic growth while a uni-directional relationship was found between the manufacturing sector and service sector. Also, Ogundipe (2022), studied the effects of Nigeria's manufacturing sector on economic growth between 1981 and 2018. The ordinary least square (OLS) method was used to process the data. The result of the findings showed that manufacturing sector's output has a significant positive relationship with gross domestic product. This indicates that manufacturing output has a positive impact on economic growth. The study also revealed a positive and significant impact between capital, labour, foreign direct investment and gross domestic product. It also found a positive but insignificant relationship between exchange rate and GDP growth.

Okoh, *et al* (2023), evaluated the effect of human capital development on the manufacturing sector in Nigeria for the period 1981 to 2021. The study made use of time series data, using the Ordinary Least Square (OLS) regression method and the autoregressive distributed lag (ARDL) bounds test to process the data. The result showed a significant inverse impact between human capital development and manufacturing value added while exchange rate had an insignificant inverse relationship on manufacturing value added, consumer price index and interest rate had an insignificant but positive effect on manufacturing value added. Onye, Daasi and Etuk (2023), worked on the impact of manufacturing sector output on economic growth in Nigeria from 1986 to 2020. The study adopted the autoregressive distributed lag (ARDL) model and the error correction model (ECM) to process and analysis of the results . The findings showed a positive and significant relationship between manufacturing sector performance on economic growth in Nigeria while gross fixed capital formation has no significant influence. It also revealed a significant short-run relationship between manufacturing sector output and economic growth.

3. Methodology

3.1 Theoretical Framework

The Solow-Swan growth model was adopted because of the model provides insight into the factors influencing economic growth and offers simplified picture of the entire economy. The model can be written as $Y = Af(K, L)$

This function can be rewritten to establish a relationship between labor and technology a

$$Y = f(K, AL)$$

Where; **Y** is the total output of an economy, **K** is the capital, **L** is the amount of unskilled labor **A** is the level of technology.

3.2 Model Specification

The model was built on the Solow- Swan model and was extended to incorporate other supportive variables that could aid the model to achieve its objectives.

$$RGDP = f(LAB, MNO, GFCF, INF, INT)$$

This model can be explicitly stated thus;

$$RGDP = \beta_0 + \beta_1LAB + \beta_2MNO + \beta_3GFCF + \beta_4INF + \beta_5INT + \mu.$$

Where RGDP=Real Gross Domestic Product; LAB=Labour Market; MNO=Manufacturing Output, GFCF= Gross Fixed Capital Formation; INF= Inflation; INT=Interest Rate

3.3 Sources of Data

Data for this study were sourced from the Central Bank of Nigeria bulletins, and the World Bank Data Base.

4. Results and Discussion of Findings

Table 1: Descriptive Statistics

	RGDP	LAB	MNO	GFCF	INF	INT
Mean	46066.51	59.83987	4453.088	27.83574	17.95140	3.196564
Median	43837.39	60.05050	3578.640	27.30754	12.87658	5.685580
Maximum	77936.10	60.42200	6754.960	48.40572	72.83550	18.18000
Minimum	6684.220	58.43700	2898.470	14.90391	5.388008	-31.45257
Std. Dev.	21276.43	0.531996	1548.297	10.42364	15.81391	9.584017
Skewness	0.015973	-1.142609	0.483041	0.329788	2.361661	-1.659326
Kurtosis	1.584444	3.267069	1.402513	1.860464	7.656278	6.904742
Jarque-Bera	2.589558	6.616935	4.501818	2.166980	56.82133	33.91976
Probability	0.273958	0.036572	0.105303	0.338412	0.000000	0.000000
Sum	1428062.	1795.196	138045.7	835.0721	556.4934	99.09349
Sum Sq. Dev.	1.36E+10	8.207579	71916698	3150.917	7502.393	2755.602
Observations	31	30	31	30	31	31

Source: Authors' Computation 2024

Table 1 reveals the summary statistics which was performed to examine its independent and dependent variables. The mean values for RGDP, LAB, MNO, GFCF, INF and INT are 46066.51, 59.83987, 4453.088, 27.83574, 17.95140 and 3.196564 respectively. The median of these variables are 43837.39, 60.05050, 3578.640, 27.30754, 12.87658 and 5.685580 respectively. RGDP, MNO, GFCF and INF are positively skewed while LAB and INT are negatively skewed. The Jarque-Bera result shows that LAB, INF and INT are statistically significant 5% level of significance.

Table 2: Correlation Matrix

	RGDP	LAB	MNO	GFCF	INF	INT
RGDP	1					
LAB	-0.6283	1				
MNO	0.7137	-0.8195	1			
GFCF	-0.7375	0.4692	-0.7348	1		
INF	-0.3252	0.2027	-0.2142	0.5857	1	
INT	0.2760	-0.1609	0.2712	-0.5345	-0.8160	1

Source: Authors' Computation 2024

According to Iyoha (2004), multicollinearity among variables is detected when the correlation coefficient is above 0.95. The correlation matrix was used to determine whether high multicollinearity exists within the variables. The result of the table 2 above shows that the

correlation coefficient of the variables are less than 0.95 which implies that there is no trace of multicollinearity among the independent variables.

Table 3: Unit Root

Variables	ADF Stats	t- Philips Perron Stats	ADF P- Values	P- Philips Perron P- Values	ADF level of integration	Philips Perrons level of integration
RGDP	-6.341013	-29.89634	0.0000	0.0001	I(1)	I(1)
LAB	-3.291399	-3.232428	0.0250	0.0285	I(1)	I(1)
MNO	-3.421129	-3.412030	0.0184	0.0187	I(1)	I(1)
GFCF	-4.190622	-4.215875	0.0030	0.0028	I(1)	I(1)
INF	-5.025905	-3.317157	0.0003	0.0230	I(1)	I(1)
INT	-6.970533	-9.336045	0.0000	0.0000	I(0)	I(1)

Source: Authors' Computation 2024

Given the results in table 3 above, the ADF and Phillips Perron test reveals that the variables were stationary at level and after first differencing. Furthermore, real gross domestic product (RGDP), labour (LAB), manufacturing output (MNO), gross fixed capital formation (GFCF) and inflation rate (INF) were stationary after first difference I(1) while the interest rate (INT) was stationary at level I(0) when the ADF test was used and stationary after first difference I(1) when Phillips Perron test was applied. This result serves as a prerequisite to adopt the Dynamic Ordinary Least Square method as a technique of analysis.

Table 4: Dynamic Ordinary Least Square

Dependent Variable: RGDP				
Variable	Coefficient	Std. Error	t-statistics	Prob
LAB	137.588.1	43910.28	3.133391	0.0259
MNO	38.90690	13.62160	2.856265	0.0356
GFCF	11367.96	3761.992	3.021792	0.0294
INF	-3310.579	1281.024	-2.584322	0.0492
INT	-4422.422	1309.683	-3.376713	0.0197
C	-8824830.	2821758.	-3.127423	0.0260
Trend	14933.33	4330.409	3.448479	0.0183
R-squared	0.929996			

Source: Authors' Computation 2024

Table 4 above reveals that Labour market has a positive and significant effect on Real Gross Domestic Product at 5% level of significance. This suggests that the labour market contributes positively to growth on Nigeria's economy. Manufacturing Output has a positive and significant effect on the Real Gross Domestic Product at 5% level of significance. This also implies that increased productivity in the manufacturing sector will increase the total output of the economy.

Gross Fixed Capital Formation has a positive and significant effect on the Real Gross Domestic Product at 5% level of significance. Therefore, as capital formation increases, manufacturing output and labour rises causing an increase in economic growth in Nigeria. Inflation rate and Interest rate have a negative but significant relationship on Real Gross Domestic Product at 5% level of significance. The R-squared reveals that 99% variation of the Real Gross Domestic Product is well explained by the independent variables. Therefore, both Labour market and Manufacturing Output reveals a percentage increase which in turn causes a 137.588.1 and 38.90690 percent increase in the Real Gross Domestic Product.

5. Conclusion and Recommendation

This study was carried out to determine the impact of labour market and manufacturing sector on economic growth in Nigeria from the period of 1993-2023. The study employed dynamic ordinary least square as a technique of analysis based on the result of the unit root test. The test revealed that labour, manufacturing output and capital formation has a positive and significant impact on the growth of Nigeria. While inflation and interest rate had a negative but significant effect on economic growth. The following recommendations emanates from the findings of the study which are;

- i. Enhancing labour market efficiency by equipping the workforce with skills relevant to the manufacturing sector.
- ii. Increase in credit facilities for manufacturing enterprises especially small and medium scale businesses through low-interest rate loans.
- iii. Increased collaboration between public and private sectors to formulate policies and infrastructure that improves economic growth.

References

- Afolabi, A.& Laseinde, O.T. (2019). Manufacturing Sector Performance and Economic Growth in Nigeria. In *Journal of Physics: Conference Series* (Vol.1378, No.3, pp 032067). IOP Publishing.
- Babasanya, A. O., Maku, O. E., Amaefule, J. N. (2020). Labour Force, National Savings and the Manufacturing Sector Productivity in Nigeria. *Izvestiya Journal of Varna University of Economics*, 64 (4), p. 459 - 473. DOI: 10.36997/IJUEV2020.64.4.459.
- Camino-Mogro Segundo (2021) TFP Determinants in the Manufacturing Sector: The Case of Ecuadorian Firms. *Applied Economic Analysis*. Emerald Group Publishing Ltd. Vol. 30 (80) pp 92-113
- Charles Kervin Kofi, Erik Hurst, Mariel Schwartz (2019) The Transformation of Manufacturing and the Decline in US Employment. *National Bureau of Economic Research*. Pp 307-360
- Cung, N. H., & Hung, D. H. (2020). The Impact of the Labor Force on Economic Growth in Vietnam. *International Business Management*, 14(10), 79-90.

- Hallward-Driemeier & Gaurav Nayyar (2017). Trouble in the Making? The Future of Manufacturing-Led Development. *International Bank for Reconstruction and Development*. World Bank Group. Washington DC20433
- Iyoha, M. A. (2004). Applied econometrics (Second Edition). Benin City, Nigeria: Mindex Publishing.
- Moyo, C., & Jeke, L. (2019). Manufacturing Sector and Economic Growth: A Panel Study of Selected African Countries. *J. Bus. Econ. Review*, 4(3), 114-130.
- Ogundipe, A. A., & Olarewaju, F. O. (2020). Manufacturing Output and Labour Productivity: Evidence from ECOWAS. *Academic Journal of Interdisciplinary Studies*, 9(5), 102-102.
- Ogundipe, M. (2022). The impact of manufacturing sector on economic growth in Nigeria. Retrieved from <https://orcid.org/0000-0002-0530-0t02>. DOI:<https://doi.org/10.21.21203/rs.3.rs-2203096/v1>,1-16.
- Okoh, J.I., Oyeranmi, A.O., Adamu, M.A., & Agbadua, O.B. (2023). Human Capital Development and Manufacturing Sector Performance in Nigeria. *Accounting and Taxation Review*, 7(1), 2023: 1-16.
- Onye, K. U., Daasi, G. L., & Etuk, S. M. (2023). On the Manufacturing Sector Performance and Nigeria's Economic Growth. *International Journal of Social Sciences*, 5, 15-79.
- Rahman, M. M. (2018). Impact of Labour Force Participation on Economic Growth in South Asian Countries.
- Sallam, M. A. (2021). The Role of the Manufacturing Sector in Promoting Economic Growth in the Saudi Economy: A Cointegration and VECM Approach. *The Journal of Asian Finance, Economics and Business*, 8(7), 21-30.
- Yakubu, M. M., Akanegbu, B. N., & Jelilov, G. (2020). Labour Force Participation and Economic Growth in Nigeria. *Advances in Management and Applied Economics*, 10(1), 1-14.