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# Industrialization and Economic Performance in Nigeria: Analysis of GDP Growth and Per Capita Income

**Felix Amabienimigha1, Ebikabowei Biedomo Aduku2**

1Department of Economics, University of Africa, Toru-Orua, Bayelsa State, Nigeria
2Department of Economics, University of Africa, Toru-Orua, Bayelsa State, Nigeria
Email: ebiopportunity@gmail.com

***Abstract:*** *This study examines the impact of industrialization on economic performance in Nigeria from 1981 – 2023 using the Ordinary Least Square (OLS) technique. Economic performance was measured using real GDP growth and per capita income. Empirical results showed that industrialisation and gross fixed capital formation had a positive and significant impact on real GDP growth. It was also found that Population growth had a negative and insignificant impact on real GDP growth, while domestic savings had positive and insignificant impact on real GDP growth. Also, it was found that Industrialisation, and gross fixed capital had a positive and significant impact on per capita income, while Population growth, and domestic savings had a positive and insignificant impact in per capita income. Government should enhance industrial policy by investing in infrastructure, removing regulatory bottlenecks, and offering incentives to manufacturing enterprises. This would increase industry productivity, attract capital investment, and eventually encourage long-term economic growth.*

**Keywords**: Industrialization; Economic Performance; GDP Growth; Per Capita Income

JEL Classification: O14, O47, O11, O15, E01

## 1 Introduction

Economic growth and development are important macroeconomic objectives, particularly in emerging countries. Economic growth refers to an increase in real GDP, whereas economic development focusses on enhancing inhabitants' quality of life and economic well-being. Growth is necessary for development and provides benefits such as lower unemployment, cheaper government borrowing, more revenue, and increased public spending. It also boosts demand, investment, and job creation, resulting in a positive cycle of growth and development [1]. The importance of industrialisation in achieving economic growth and development is increasingly recognised by development planners and other economic managers. China and most other industrialising countries serve as examples.

Industrialisation is critical to generating quick economic growth and development. It strengthens the economic base, generates markets for intermediate goods, reduces imports, and increases employment and productivity [2]. It also encourages capital accumulation, innovation, and lowers income inequality. Sustainable industrialisation fosters entrepreneurial talent, skilled labour, and encourages cross-sector collaboration. These linkages and spillover effects, particularly those between industry and services, boost overall output. Additionally, industrialisation boosts foreign exchange profits [3; 4; 5; 6].

Industrialisation promotes economic growth and development by accelerating advances in numerous sectors of the economy. Growth in one area frequently leads to expansion in similar sectors. It also creates more opportunity for talent development and technological growth. The adoption of new technology, made possible by industrialisation, increases production efficiency, reduces costs, enhances product quality, and broadens market reach. Workers' ability to save grows as their wages rise, which stimulates additional investment and industrial expansion. Domestically, the market for both raw materials and completed products expands as industry grows. Industrial expansion benefits economies because it creates more jobs, raises incomes, and expands economic prospects. This procedure also increases access to services, per capita income, and labour productivity.

Nigeria has used a variety of industrialisation policies over the years to promote industrial sector development, including rationalising government expenditure, increasing budget allocations to industry, and implementing smart fiscal methods. Notably, from 1962 to 1980, the nation undertook import substitution industrialisation to cut imports and preserve foreign cash. Despite these efforts, industrial growth has been disappointing due to a weak technological foundation, which has kept manufacturing dependent on imported inputs, limiting the intended impact on economic growth and development. The fall of the global oil market between 2015 and 2020 resulted in dramatic drops in Nigeria's oil export earnings, rendering its import-dependent industrial structure unsustainable. In response, the government announced the National Industrial Revolution Plan (NIRP), which aims to increase the manufacturing sector's GDP contribution from 4% to more than 10% within five years while also increasing revenue and employment. Despite these efforts, industrialisation and manufacturing performance have been lacklustre and dismal (7; 8; 9].

Only a few empirical studies have thoroughly examined the effects of industrialisation on economic growth and development. Furthermore, in order for Nigeria to reach its goal of becoming one of the world's greatest economies in the near future, knowing how industrialisation effects growth and development is critical for speeding progress in the industrial and manufacturing sectors. A fundamental question is whether government industrialisation initiatives have had a good impact on economic growth and development. This study is being done in response to this critical question. Thus, the impact of industrialization on real GDP growth and per capita income in Nigeria is specifically examined in this study.

This study is notable because of its policy implications, scholarly significance, and contribution to the current literature. It gives empirical insight into the relationship between industrialisation, economic growth, and development in Nigeria, allowing policymakers to make more informed decisions concerning important industrial investments. Furthermore, the report emphasises the need for new regulations to protect the industrial sector from future threats such as low and unsustainable performance. The ensuing policy recommendations will aid in successful decision-making, while the findings will serve as a helpful reference for researchers and academicians, adding to the body of knowledge on the subject.

## 2 Literature Review

### 2.1 Conceptual Literature

#### 2.1.1 Industrialization

Industrialisation is the extension and advancement of industrial operations, particularly in manufacturing, processing, and adding value to existing products or developing new ones [2; 10]. It comprises converting raw materials into useful goods. These finished items can be sold straight to consumers for final use or used as intermediary commodities in further production. Agro-processing, metal and plastic industries, ICT and electrical equipment, textiles, clothes, footwear, cement, and construction materials are among the sectors that fall under industrialisation. The expansion of the manufacturing sector serves as the foundation for industrialisation. Engineering, construction, electronics, chemicals, energy, textiles, food and drinks, metalworking, plastics, transportation, and telecommunications are among the industries represented in this sector. Manufacturing success is measured by its contribution to GDP, which indicates the sector's size and degree of activity. In this study, industrialisation is defined as the manufactured value added as a proportion of GDP. However, Nigeria's industrialisation has slowed in recent years, owing mostly to issues such as poor energy supply, smuggling of foreign goods, trade liberalisation, globalisation, high exchange rates, and insufficient government investment in infrastructure.

#### 2.1.2 Economic Development

Economic development entails changes to social structures, national institutions, and economic growth, as well as reduced inequality and poverty eradication [11]. It can be seen as a gain in a country's real and per capita incomes. It also considers changes in capital formation, technical innovation, skill levels, efficiency, and institutional frameworks. Essentially, economic growth is a long-term process characterised by a succession of interconnected changes in both supply-side fundamentals and demand structures that result in a steady increase in a country's net national product [1].

#### 2.1.3 Economic Growth

Economic growth is the pace at which the actual Gross National Product (GNP) increases. It is the process by which an economy's productive capacity evolves with time. In this study, economic growth is defined as the increase of an economy's productive capacity, which results in a bigger supply of commodities and services over time. It represents a steady increase in per capita output over a given period of time. The most commonly used indicator of economic growth is the growth of Real Gross Domestic Product (RGDP), which indicates the change in total spending on all final goods and services produced domestically in a given year. RGDP growth is an important global indicator of economic performance, and it is frequently associated with rising living standards [3].

### 2.3 Empirical Literature Review

[3] looked at how industrialisation affects employment and economic growth. They used the Autoregressive Distributed Lag (ARDL) model and the Error Correction Model (ECM) to analyse time series data from 1998 to 2019. The findings showed that industrialisation had a strong positive impact on both economic growth and employment creation in South Africa. [2] used a variety of econometric tools to study the impact of industrialisation on economic growth, including the pooled mean group, mean group, dynamic fixed effects, and models that account for common correlated effects. The study took manufacturing value-added as a proxy for industrialisation. The empirical findings revealed that higher degrees of industrialisation are positively associated with both short and long-term economic growth. [12] investigated the role of industrialisation in Nigeria's economic progress. They used the Johansen cointegration and Granger causality tests to determine the long-term relationship and direction of causality between

variables. The study discovered that industrial output had a considerable direct impact on real GDP, with an overall effect of 86%. Additionally, a one-way causal link between industrial output and real GDP was observed. [1] investigated the effects of industrialisation on Tanzanian economic growth, with an emphasis on the causes of structural changes in the manufacturing sector. The study used a vector error correction model based on a parsimonious model that covered the years 1970 to 2017. The findings revealed a positive association between Tanzania's manufacturing sector, as measured by value added, and economic growth.

[5] evaluated the impact of industrialisation in boosting economic growth in Nigeria using the Johansen Co-integration test, the Error Correction Method (ECM), and the Ordinary Least Squares (OLS) technique. Their studies found that sectors such as crude petroleum, natural gas, manufacturing, and solid minerals had positive and significant impact on the country's economic development. [13] examined the impact of manufacturing sector output on Nigeria's economic growth from 1981 to 2016. They used the Autoregressive Distributed Lag (ARDL) model and the Granger causality test in their investigation. The findings revealed that both manufacturing capacity utilisation and manufacturing output had a positive impact on real GDP, whereas government investment expenditure had a negative effect. Furthermore, the money supply and interest rates were found to have a positive effect on real GDP. [14] investigated the relationship between industrialisation and economic growth in Nigeria from 1981 to 2015 using the Autoregressive Distributed Lag (ARDL) model. Their findings showed that industrialisation had a positive and significant impact on the country's economic progress.

[15] used the Autoregressive Distributed Lag (ARDL) approach to study the impact of industrialisation on Nigerian economic growth between 1981 and 2015. Their findings revealed that industrial output had a significantly positive impact on gross domestic product (GDP), implying that industrial sector expansion directly contributes to increased GDP. [16] examined the impact of industrialisation on economic growth in 37 African nations from 1980 to 2014. The study used the System Generalised Method of Moments (GMM) to analyse data. The results demonstrated that industrialisation had a significant impact on economic growth in Africa, and that trade openness reinforced the favourable effect of industrialisation on economic growth. [17] evaluated the impact of industrialisation on economic growth, focussing on Senegalese manufacturing enterprises. The study analysed data from 1960 to 2017 using the Ordinary Least Squares (OLS) approach. The data showed that industrial output contributed positively and significantly to economic growth. [18] examined the impact of industrialisation on economic growth in Sub-Saharan Africa (SSA) between 1990 and 2015. The analysis was carried out with both fixed and random effects models. The findings revealed that industrialisation, as measured by manufacturing value-added, boosted regional economic growth. [19] used panel data to examine the impact of industrialisation on economic development in China from 1978 to 2016, using Kaldor's Law. Their findings showed that industrialisation had positive and significant impact on economic growth.

Although there is relevant research in this sector, only a handful have focused on the relationship between industrialisation and Nigeria's economic growth and development [e.g., 3; 5; 13; 14; 15). A study of the empirical literature suggests that these studies frequently employed manufacturing sector output as a proxy for industrialisation, which may not completely represent the scope of industrialisation. As a result, this study will calculate manufacturing value-added as a proportion of GDP, which is a more comprehensive measure. This approach is intended to produce more robust findings than previous research. Furthermore, earlier research did not investigate the influence of industrialisation on per capita income, a fundamental indication of development. By filling these gaps, this work adds new insights to the existing literature.

## 3 Methodology

### 3.1 Theoretical Framework

The paper's analytical framework is based on the Cobb-Douglas production function, which was established in 1928 by economist Paul Douglas and mathematician Charles Cobb. This function describes the link between output and input components in the production process.

$$Y = AK^{\alpha}L^{\beta} \qquad (1)$$

where: is output growth, K is capital stock, which is measured as the total investment in fixed assets, L is labour endowment, and A is total factor productivity, that is, productivity of existing technology, technical process, etc. Industrialisation can boost total factor productivity (A) by increasing the efficiency of existing technologies and manufacturing processes, resulting in higher overall productivity as:

$$A = (INDUS) = MVAPGDP^{\varphi} \qquad (2)$$

INDUS signifies industrialisation. In this study, industrialisation is measured as manufacturing value-added as a percentage of GDP (MVAPGDP). Thus, by substituting Equation (2) into Equation (1), and replacing capital stock (K) with domestic savings (DOS), and output growth (Y) with GDP growth rate (GDPR), we arrive at:

$$GDPR = MVAPGDP^{\varphi}DOS^{\alpha}L^{\beta} \qquad (3)$$

We take the logs of the variables to arrive at equation (4):

$$GDPG = MVAPGDP + \alpha dos + \beta L. \qquad (4)$$

Since our focus is also on per capita income, we can replace GDPG with per capita income (PCI) and rewrite Equation (4) as:

$$PCI = MVAPGDP + \alpha dos + \beta L \qquad (5)$$

Variables that have been log converted are displayed in lowercase letters. GDPR, PCI, and L are still in their original form because they are already expressed as rates. GDPR refers to the economic growth rate. Thus, economic growth is modelled in terms of manufacturing value added as a percentage of GDP, domestic savings, and labour. The parameters φ, α, and β indicate the output elasticities for manufacturing value-added, capital (proxied by domestic savings), and labour, respectively.

### 3.2 Data

This study's data is an annual time series that spans the sample periods 1981 – 2023. The data is sourced from the Central Bank of Nigeria's (CBN) statistical bulletins, various issues, and the world development indicator – WDI. The variables include real GDP growth, manufacturing value added as percentage of GDP, per capita income, gross fixed capital formation, population growth rate, and domestic savings. The data on population growth was sourced from the WDI, while the data on the rest of the variables were sourced from the CBN statistical bulletin, various issues.

### 3.3 The model

The functional form of the model for estimation for objective one is:

$$RGDPR = g(MVAPGDP, GFCF, LAB, DOS) \qquad (6)$$

GDPG denotes real GDP growth, which serves as a proxy for economic growth; MVAPGDP denotes manufacturing value-added as a percentage of GDP; GFCF denotes gross fixed capital formation, which is used as a proxy for domestic investment; LAB denotes labour, which is measured by the population growth rate; and DOS represents domestic savings. Taking the logarithm of the variables in Equation (6), the econometric form is given as follows:

$$RGDPG = a_0 + a_1\text{MVAPGDP} + a_2 gfcf + a_3 LAB + a_4 dos + u_{1t} \qquad (7)$$

Where all of the variables stayed as defined earlier. The small lettered variables are logged. The variables with capital letters are not logged because they are rates. $u_{1t}$ is the error term. $\alpha_1$, $\alpha_2$, $\alpha_3$, and $\alpha_4$ are parameters estimated. Equation (7) is specified to capture objective one, which is to examine the impact of industrialization on real GDP growth.

To capture objective two, which is to examine the impact of industrialization on per capita income, the following functional form is specified;

$$PCI = g(\text{MVAPGDP}, GFCF, LAB, DOS) \qquad (8)$$

Per capita income (PCI) is a measure of economic development. MVAPGDP stands for manufacturing value-added as a percentage of GDP, GFCF for gross fixed capital formation (used as a proxy for domestic investment), LAB for labour, which is measured by population growth rate, and DOS for domestic savings. The logarithmic transformation of the variables in Equation (8) specifies the econometric model as follows:

$$PCI = \beta_0 + \beta_1\text{MVAPGDP} + \beta_2 gfcf + \beta_3 LAB + \beta_4 dos + u_{2t} \qquad (9)$$

Where all the variables remained as defined earlier. $u_{2t}$ is the error term. $\beta_1$, $\beta_2$, $\beta_3$,and $\beta_4$ are parameters estimated. The estimate methodologies used in this work are Ordinary Least Squares (OLS). The OLS estimator is stated to be the Best Linear Unbiased Esimator (BLUE) in the class of all available estimators if the assumptions such as linearity, zero value of the predicted disturbance component, and uncorrelated disturbance term are met. To avoid misleading results, the estimation began with a unit root test, which was performed using the Augmented Dickey Fuller (ADF) unit root test process. The Durbin-Watson test was used to assess the models' autocorrelation.

## 4 Results

### 4.1 Unit Root Test

The unit root test determines if variables in a regression model are stationary. To determine the presence of a unit root, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests are used. The results of these tests are shown on Table 1.

Table 1: Augmented Dickey-Fuller and Philips–Perron unit root test results

| Variable | Augmented Dickey-Fuller Result | | Philips–Perron Result | | Lag order | ~I(d) |
|---|---|---|---|---|---|---|
| | Level | 1st Difference | Level | 1st Difference | | |
| RGDPR | -1.132 | -2.132* | -0.970 | -3.970* | 2 | I(1) |
| MVAPGDP | -0.270 | -3.387* | -0.400 | -5.595* | 2 | I(1) |
| gfcf | -1.530 | -2.530* | -1.659 - | -4.659* | 2 | I(1) |
| LAB | -1.058 | -2.355* | 0.882 | -4.212* | 2 | I(1) |
| dos | -1.647 | -2.969* | -0.929 | -4.993 * | 2 | I(1) |
| PCI | -1.191 | -2.439* | -1.133 | -4.308* | 2 | I(1) |
| An asterisk (*) indicates significance at the 5% level, meaning that the null hypothesis of a unit root has been rejected. The Augmented Dickey-Fuller (ADF) test has a 5% critical value of -1.950, both at level and first difference. The Phillips-Perron (PP) test has a 5% critical value at both levels, with the initial difference being -3.548. It is worth noting that neither the ADF nor the PP unit root test models' specifications included any constant terms. | | | | | | |
| Note: Variables in small case letters are logged variables. RGDPR, MVAPGDP, LAB, and PCI are not logged because the variables were in rates. | | | | | | |

Source: Author's Computation

The Augmented Dickey-Fuller (ADF) test findings reveal that the test statistics for the variables at level are lower than the 5% critical value, indicating that the null hypothesis of a unit root cannot be rejected. Thus, the variables are non-stationary at level. However, after differencing the variables once and reapplying the test at first difference, the test statistics exceed the 5% crucial value. This results in the rejection of the null hypothesis, demonstrating that the variables become stationary at first difference and are thus integrated with order one, I(1). The Phillips-Perron test results confirm this conclusion, demonstrating that while none of the variables are stationary at level, they all become stationary after the first differencing step.

### 4.2 Impact of Industrialization on Real GDP Growth

The impact of industrialisation on real GDP growth was investigated using the OLS approach. Prior to the study, the variables were tested for cointegration. The Johansen test for cointegration was employed, and the results are shown in Table 2 below.

Table 2: Result of Johansen test for cointegration

| Maximum Rank | Eigenvalue | Trace Statistics | 5% critical value |
|---|---|---|---|
| 0 | - | 87.1825 | 59.46 |
| 1 | 0.7201 | 40.0696 | 39.89 |
| 2 | 0.4276 | 19.4251* | 24.31 |
| 3 | 0.2762 | 7.4649 | 12.53 |
| 4 | 0.1754 | 0.3281 | 3.84 |
| **5** | 0.0088 | | |

Source: Author's computation

Two of the trace statistics exceed the 5% critical value, implying the existence of two cointegrating equations. This results in the rejection of the null hypothesis of no cointegration at the 5% significance level. As a result, it is inferred that the variables have a long-run relationship. The regression results are shown on Table 3 below.

Table 3: Estimates of the impact of industrialization on real GDP growth

| RGDPR | Coefficients | Standard Errors | t-stat | P-value |
|---|---|---|---|---|
| MVAPGDP | 0.7837 | 0.2849 | 2.75 | 0.000 |
| gfcf | 14.4613 | 6.5436 | 2.21 | 0.034 |
| LAB | -6.6296 | 25.4928 | -0.26 | 0.796 |
| dos | 0.1217 | 5.7351 | 0.02 | 0.983 |
| _cons | -0.2365 | 1.4314 | -0.17 | 0.870 |
| R-Squared | 0.6060 | | | |
| Adj. R-Squared | 0.5098 | | | |
| F (4, 33) | 12.14 (0.0027) | | | |
| Durbin-Watson d-statistic (5, 38) | 2.1905 | | | |
| Breusch-Godfrey LM chi2 | 0.715 (0.7296) | | | |

Source: Author's computation

Increased industrialisation contributes significantly to real GDP growth. Specifically, a 1% increase in industrialisation led to a 0.78% increase in yearly real GDP growth. This impact is statistically significant, as evidenced by a significant t-value and a p-value, resulting in the rejection of the null hypothesis. Therefore, industrialisation had a positive and significant impact on economic growth.

Gross fixed capital formation had a positive and statistically significant impact on real GDP growth. A 1% increase in gross capital formation led to a 14.46% rise in annual real GDP growth. The high t-value and low p-value confirm the significance, leading to the rejection of the null hypothesis. Thus, capital investment strongly contributed to economic growth.

The negative coefficient indicated that a 1% increase in population growth resulted in a 6.63% decrease in real GDP growth (annual%). However, the t-value of -0.26 indicated that this effect was not statistically significant. As a result, the null hypothesis that population growth had no significant impact on real GDP growth is accepted at 5%. Therefore, while population growth modestly slows GDP growth, the effect is statistically insignificant.

An increase in domestic savings resulted in a 0.12% increase in real GDP growth (annual%), although this effect is statistically insignificant, as evidenced by a t-value of 0.02 and p-value of 0.983. As a result, the null hypothesis is accepted at the 5% level, implying that domestic savings had no significant impact on real GDP growth.

The $R^2$ value of 0.6060 implied that the independent variables explain 60.60% of the variation in real GDP growth (annual%), with the remainder owing to variables outside those in the model. The F-value of 12.14 ($p = 0.0027$) indicated that the variables are jointly significant at the 5% level. The Durbin-Watson value, which is close to 2, and the insignificant Breusch-Godfrey result ($p = 0.7296$), confirm that the model had no autocorrelation.

### 4.3 Impact of Industrialization on Per Capita Income

The impact of industrialisation on per capita income was also investigated using the OLS method. The study was conducted following a test for cointegration of the variables in the model. The Johansen test for cointegration was employed, and the results are shown in Table 4 below.

Table 4: Result of Johansen test for cointegration

| Maximum Rank | Eigenvalue | Trace Statistics | 5% critical value |
|---|---|---|---|
| 0 | - | 155.199 | 68.52 |
| 1 | 0.8255 | 92.3523 | 47.21 |
| 2 | 0.6565 | 53.8856 | 29.68 |
| 3 | 0.5839 | 22.3177 | 15.41 |
| 4 | 0.3645 | 5.9957* | 3.76 |
| **5** | 0.1534 | | |

Source: Author's computation

Four of the trace statistics were above the 5% critical value, implying the existence of four cointegrating equations. As a result, the null hypothesis of no cointegration is rejected at a significance level of 5%. This demonstrated that the variables in the model had a long-run relationship. The regression results are shown on Table 5.

Table 5: Estimates of the impact of industrialization on per capita income

| D.PCI | Coefficients | Standard Errors | t-stat | P-value |
|---|---|---|---|---|
| **MVAPGDP** | 13.3346 | 5.6503 | 2.36 | 0.039 |
| **gfcf** | 3.0983 | 1.0987 | 2.82 | 0.000 |
| **LAB** | 9.66069 | 5.9268 | 1.63 | 0.113 |
| **dos** | 11.3021 | 125.3488 | 0.09 | 0.929 |
| **_cons** | 30.1675 | 31.2845 | 0.96 | 0.342 |
| R-Squared | 0.6283 | | | |
| Adj. R-Squared | 0.5227 | | | |
| F (4, 33) | 31.21 (0.0007) | | | |
| Durbin-Watson d-statistic (5, 38) | 1.5039 | | | |
| Breusch-Godfrey LM chi2 | 2.425 (0.1194) | | | |

Source: Author's computation

The industrialisation coefficient, 13.3346, had a t-value of 2.36. Because the absolute t-value is significant, the null hypothesis that industrialisation had no statistically significant impact on per capita income is rejected at the 5% level. The p-value of 0.039 suggests no significant in rejecting the null hypothesis. Increased industrialisation led to a significant 13.33% increase in per capita income.

Gross fixed capital formation had a positive coefficient of 3.0983 with a t-value of 2.82. Because the t-value is significant, the null hypothesis that gross fixed capital formation has no statistically significant effect on per capita income is rejected at the 5% significance level. The significant p-value of 0.000 supports this rejection. Specifically, an increase in gross fixed capital formation resulted in a 3.10% increase in per capita income.

Population growth boosts per capita income by 9.66%. However, this impact is statistically insignificant, as evidenced by the t-value of 1.63 and p-value of 0.113. Given the absence of statistical significance, the null hypothesis that population growth has no significant impact on per capita income is accepted at the 5% level. Therefore, while the impact is positive, it is not statistically significant in the context of Nigeria.

Domestic savings also had a positive impact on per capita income, with an 11.30% rise arising from larger domestic savings. However, the t-value of 0.09 indicated that this impact was not statistically significant. This is backed further by the high p-value of

0.929, which indicated that adopting the null hypothesis involves minimal error. As a result, at the 5% significance level, the null hypothesis that domestic savings have no influence on per capita income is accepted.

The $R^2$ value of 0.6283 shows that the independent variables explain 62.83% of the variation in per capita income, with the remainder attributed to other factors not included in the model. The F-value of 31.21 ($p = 0.0007$) indicates that the variables together have a significant impact on per capita income. The Durbin-Watson statistic of about 2 and the negligible Breusch-Godfrey test ($p = 0.1194$) both corroborate the model's lack of autocorrelation.

### 4.4 Discussion of the findings

The positive and significant impact of industrialisation and capital investment on real GDP growth suggests that policies aimed at promoting industrial development and capital formation, such as infrastructure improvements, manufacturing incentives, and improved access to finance, can significantly drive economic growth. The negative but insignificant effect of population growth suggests that, while rapid population growth may pose productivity challenges, it does not currently have a statistically significant impact on economic performance, highlighting the need for human capital development policies that convert population growth into a demographic dividend. Furthermore, the positive but modest influence of domestic savings on GDP indicates a possible underutilisation of internal financial resources, highlighting the need for financial reforms and policies that stimulate savings mobilisation and channel them into productive investments. Overall, the findings indicate a focus on industry and investment-driven growth policies, as well as addressing structural challenges that limit the effectiveness of savings and population contributions to economic development.

Also, the strong beneficial impact of industrialisation and capital investment (gross fixed capital formation) on per capita income highlights the significance of policies that promote industrial expansion and long-term investment in productive infrastructure. These findings indicate that increasing the manufacturing base and promoting capital development can directly improve living standards. On the other hand, the positive but statistically insignificant impacts of population growth and domestic savings suggest that, while these variables may contribute to income development, their current impact is limited, most likely due to structural inefficiencies or underutilisation. As a result, governments should focus on increasing the productivity of the rising population through education, skill development, and job creation, while also strengthening financial systems to mobilise and productively invest domestic funds. Overall, prioritising industrialisation and investment-friendly settings, while addressing the constraints that limit the effectiveness of savings and demographic variables, can greatly increase per capita income and drive long-run economic development.

## 5 Conclusion and Recommendations

Based on the findings, industrialisation and capital investment are essential drivers of real GDP growth in Nigeria, with both having positive and statistically significant effects. This emphasises the importance of promoting manufacturing and increasing investment in productive capital assets in order to spur economic growth. Conversely, population increase had a negative and minor influence on real GDP growth, showing that the rising population may not be successfully contributing to economic output, maybe due to high dependency ratios or unemployment. Similarly, while domestic savings had a positive impact on real GDP growth, the impact was statistically insignificant, showing that the current level or use of domestic savings may not be adequate to fuel meaningful economic growth. The findings underline the need of policies that promote industrial expansion and capital formation while addressing structural difficulties that limit the economic contributions of population growth and domestic savings.

Also, industrialisation and capital investment are essential drivers of economic development in Nigeria, as they considerably enhance per capita income. This emphasises the need of increasing industrial capacity and fixed capital investments to raise living standards. In contrast, while population increase and domestic savings had positive benefits on per capita income, their effects were statistically negligible, implying that without strategic planning and efficient resource mobilisation, these factors may not effectively contribute to income growth.

Government should enhance industrial policy by investing in infrastructure, removing regulatory bottlenecks, and offering incentives to manufacturing enterprises. This would increase industry productivity, attract capital investment, and eventually encourage long-term economic growth. Also, the government should boost industrial policy by encouraging value-added manufacturing and assisting industrial clusters with infrastructure development, tax breaks, and credit. This will increase industrial output and investment efficiency, ultimately raising per capita income and propelling equitable economic development.

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