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# Effect of Public Sector Wage Expenditure on Economic Growth in Nigeria

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**Abstract**: This study examined the effect of public sector wage expenditure on economic growth in Nigeria, with the specific objective of analyzing the effect of public sector wage payments on both real and nominal GDP from 2000 to 2024. The study adopted an ex-post facto research design, utilizing annual secondary time-series data collected from the Central Bank of Nigeria Statistical Bulletins. The population comprised all years from 2000 to 2024, giving a total sample size of 25 observations. Data were analyzed using the Fully Modified Ordinary Least Squares (FMOLS) method, while stationarity was tested with the Augmented Dickey-Fuller (ADF) test, and Granger causality was applied to examine the direction of influence. Findings reveal that: public sector wage expenditure has a positive and significant effect on real GDP in Nigeria ($\beta = 116.0663$, $p = 0.000$); public sector wage expenditure has a positive and significant effect on nominal GDP in Nigeria ($\beta = 570.9180$, $p = 0.000$). The study concluded that effective management of public sector wages can stimulate economic growth, highlighting the importance of aligning wage policies with fiscal and development objectives. Hence, the Federal Ministry of Finance and the Budget Office of the Federation should ensure that public sector wage payments are timely and efficiently disbursed. By maintaining consistent and predictable wage payments, these agencies can support household consumption and stimulate productive activities in the economy, thereby sustaining growth in real output and enhancing overall economic stability.

**Keywords**: Public sector wage, real economic growth, nominal economic growth

## 1.0 Introduction

Nigeria, as the most populous country in Africa and one of the continent's largest economies, has experienced significant fluctuations in its economic growth over the past few decades. The country's economic structure is characterized by a mix of agriculture, services, and oil-dependent industrial sectors (Olisemeka & Ezenekwe, 2025), while the public sector remains a dominant employer. Since the return to democratic governance in 1999, the Nigerian government has expanded its workforce substantially, reflecting both an increasing demand for public services and political pressures to provide employment opportunities. The growth of the public sector wage bill has been accompanied by recurrent debates over its sustainability and its impact on national development (Babalola et al., 2021). Nigeria faces the challenge of balancing the need to compensate public employees fairly with the imperative to maintain fiscal stability. Economic growth in Nigeria has been inconsistent, often influenced by global oil prices, internal policy decisions, and macroeconomic management (Oladayo & Ikponmwosa, 2025). Against this backdrop, understanding the role of public sector wage expenditure is crucial, as it represents one of the largest components of government spending. The size and allocation of public sector wages can have far-reaching consequences for the country's budget, resource distribution, and overall economic performance. Public sector wage expenditure is particularly significant because it is not only a direct cost to the government but also a tool for social and economic policy that can affect consumption patterns, investment decisions, and labor market dynamics (Xu et al., 2015). Examining this relationship is therefore essential for policymakers seeking to optimize government spending while fostering economic growth.

Public sector wage expenditure remains one of the most important elements of fiscal policy in modern economies, including Nigeria. Wage spending determines how government resources are distributed among employees and can influence household income, demand for goods and services, and overall economic activity (Rusman et al., 2024). In Nigeria, public sector wages have consistently absorbed a significant proportion of government revenue, often exceeding the funds allocated to capital expenditure or critical developmental programs. Economic growth, measured by the increase in gross domestic product and productivity, depends on multiple factors, including government spending patterns, investment levels, and labor force efficiency. Public sector wages can directly impact economic growth by affecting the purchasing power of employees, stimulating domestic consumption, and influencing private sector development (Babalola et al., 2021). Furthermore, a well-structured wage policy can attract and retain

skilled workers in the public sector, enhance productivity, and contribute to the provision of quality public services, which in turn supports economic development. Conversely, disproportionate wage expenditure may crowd out investments in infrastructure, education, healthcare, and other sectors that have long-term growth potential. In today's business environment, where private sector investment is vital for economic diversification (Ogbonna, 2018), the allocation of government resources to wages rather than productive investments can have implications for competitiveness and innovation.

The effect of public sector wage expenditure on economic growth can be observed through multiple channels. High wage bills can stimulate aggregate demand by increasing household income and consumption, which in turn may promote business activity and create employment opportunities (Mbaleki, 2021). Public sector wages provide employees with disposable income that is often spent on goods and services, supporting sectors beyond government operations. However, excessive wage spending can create fiscal pressures that limit the government's ability to invest in infrastructure, industrial development, and human capital formation, which are essential drivers of long-term growth. In Nigeria, there is a growing concern that large wage bills reduce fiscal space, leading to borrowing and debt accumulation, which can hinder economic stability. The relationship between public sector wage expenditure and economic growth is complex, depending on how efficiently the funds are utilized and whether wages are aligned with productivity (Adebanjo et al., 2024). If wages are set higher than productivity levels or allocated to unproductive areas, they may not translate into improved output or growth. On the other hand, strategically managed wage expenditure can enhance worker motivation, improve service delivery, and indirectly foster private sector development, all of which contribute positively to the economy (Consults, 2023).

Wages paid to public employees should adequately reflect their contribution to the delivery of essential services, motivate productivity, and support household consumption without compromising investment in infrastructure, health, education, and other sectors that drive long-term development (Alege et al., 2021). When government wage bills are managed effectively, they can contribute to increased labor efficiency, improved service delivery, and a stable economic environment that encourages private sector activity. Public sector employment and remuneration should therefore complement broader fiscal policies, promoting growth while maintaining fiscal discipline and financial sustainability.

In Nigeria, the reality has often deviated from this approach. Over the years, the proportion of government revenue allocated to public sector wages has grown substantially, sometimes surpassing spending on critical capital projects and development programs. Wage payments have absorbed a significant share of budgetary resources, leaving limited funds for investments that could stimulate economic expansion. In addition, the management of wage expenditure has sometimes been disconnected from productivity and performance, resulting in inefficiencies and limited returns in terms of economic output. This situation has been compounded by rising public debt, inflationary pressures, and the need to sustain a large workforce without corresponding increases in government revenue. Consequently, the allocation of funds to wages has not always translated into improvements in service delivery or meaningful contributions to economic growth (Alege et al., 2021).

High public sector wage expenditure without corresponding growth in productivity can strain government finances, increase borrowing, and reduce the capacity to fund infrastructure, social programs, and other growth-enhancing initiatives. It can also crowd out private sector development, as excessive government spending on wages may limit investment incentives and reduce resources available for entrepreneurship and business expansion. The long-term effect is slower economic growth, limited employment creation in the private sector, and a persistent imbalance between public expenditure and revenue generation. Despite the considerable body of research on wages, public expenditure, and economic growth, there remains a notable gap in the literature regarding the specific impact of public sector wage expenditure on Nigeria's macroeconomic performance over an extended period. While studies such as Kettaf (2025) and Xu et al. (2015) have explored the relationship between wages and economic growth in developed economies and simulated contexts, their findings may not fully reflect the structural and fiscal realities of Nigeria. Similarly, Adebanjo et al. (2024), Consults (2023), and Alege et al. (2021) focus on minimum wage policies, per capita income, or household welfare, but they do not explicitly analyze the broader effect of public sector wage payments on both real and nominal GDP. Caponi and Nobili (2024) and Mbaleki (2021) examined public-sector employment and wage bills in different regional or sectoral contexts, yet their studies are either limited to short-term effects or apply to economies with different institutional frameworks, limiting generalizability to Nigeria. Babalola et al. (2021) provide hints into wage policy and investment in Nigeria, but the analysis does not fully capture the long-term aggregate economic growth implications of total public sector wage expenditure. Basantwani et al. (2021) and Shubalyi and Petrukha (2021) emphasize employment ratios and regional wage effects, mostly outside Nigeria, leaving a gap in understanding country-specific dynamics. Collectively, these studies highlight the role of wages and public expenditure but lack a comprehensive long-term empirical assessment of how public sector wage expenditure influences economic growth in Nigeria. Therefore, this study addresses this gap by examining 25 years of data from 2000 to 2024, employing Fully Modified Ordinary Least Squares (FMOLS) and Granger causality techniques to provide robust hints into the effect of public sector wage expenditure on both real and nominal GDP, thereby filling a critical void in the Nigerian fiscal policy literature.

### 1.1 Hypotheses of the study

**$H_{01}$:** Public sector wage expenditure has no significant effect on real GDP in Nigeria.

**$H_{02}$:** Public sector wage expenditure has no significant effect on nominal GDP in Nigeria.

## 2.0 Literature Review

### 2.1 Conceptual Review

#### 2.1.1 Public Sector Wage Expenditure

Public sector wage expenditure refers to the total financial resources allocated by the government to compensate employees within its institutions and agencies (Gomes, 2015). It includes salaries, allowances, pensions, and other forms of remuneration paid to civil servants, public officers, and workers employed in government-owned organizations. This expenditure represents a significant portion of government spending in many countries, reflecting the state's role as a major employer and its responsibility to provide fair compensation for labor (Ekanayake, 2012). Governments use wage expenditure to attract, retain, and motivate employees, ensuring that public institutions operate effectively and can deliver essential services to citizens (Mbaleki, 2021). Beyond the immediate payment of salaries, public sector wage expenditure also affects the distribution of resources within the economy. High levels of wage payments can influence household consumption patterns because public employees typically spend their earnings on goods and services, stimulating domestic demand. It is also closely linked to fiscal planning and budgetary allocations, as governments must balance the need for adequate compensation with the demands of other areas, such as infrastructure, healthcare, and education. Decisions regarding wage expenditure often reflect policy priorities and societal expectations regarding public service provision.

Public sector wage expenditure has implications for labor relations and public administration. It establishes formal structures for employment, sets standards for remuneration, and often determines the hierarchy and structure of public employment (Gomes, 2015). Variations in wage levels can affect employee motivation, performance, and loyalty, which in turn influences the efficiency of public service delivery. Additionally, wage expenditure can act as a stabilizing factor in the economy, particularly during periods of economic downturn, as regular payments to public employees support consumption and demand (Babalola et al., 2021). In many countries, the management of public sector wages is closely monitored to ensure fiscal sustainability. Excessive expenditure on wages can strain government resources and limit spending on other critical areas, while inadequate remuneration can undermine institutional efficiency and employee morale.

#### 2.1.2 Economic Growth

Economic growth refers to the sustained increase in the production of goods and services in a country over time (Okunlola et al., 2025). It is commonly measured by changes in gross domestic product, either at constant prices to account for inflation or at current prices for nominal assessments. Growth represents an expansion of economic activity that enables a country to generate more wealth, create employment opportunities, and improve living standards. It reflects the capacity of an economy to utilize its resources more efficiently and to increase the volume of output without necessarily exhausting available inputs. Growth captures the dynamic changes in a nation's productive capabilities. When an economy grows, it demonstrates the ability to generate higher output using labor, capital, technology, and natural resources (Nwoye et al., 2023). This increase in production is often accompanied by improvements in infrastructure, industrial capacity, and institutional development, which support further expansion. Economic growth provides governments and policymakers with the resources to invest in social programs, education, and health, thereby enhancing the quality of life for citizens. It also contributes to the overall stability of a nation by creating wealth that can reduce poverty and inequality.

Economic growth reflects the performance of an economy over time and is often influenced by various internal and external factors, including investment, consumption, trade, technology, and governance (Okunlola et al., 2025). It signals a country's ability to meet the rising needs of its population, generate surplus for savings, and fund public and private initiatives. Growth is closely linked to the efficiency with which resources are allocated and utilized, showing how productive activities are organized and sustained. The rate at which an economy grows provides a benchmark for evaluating economic policies and development strategies. Real GDP and nominal GDP are both measures of a country's economic output, but they differ in how they account for price changes over time (Salmah et al., 2019). Nominal GDP measures the total value of all goods and services produced in an economy using current prices during the period of measurement, which means it reflects both changes in production and changes in price levels (Fackler & McMillin, 2020). In contrast, real GDP adjusts for inflation or deflation by using constant prices from a base year, isolating the effect

of changes in the volume of goods and services produced (Salmah et al., 2019). While nominal GDP can overstate or understate economic growth when prices fluctuate, real GDP provides a more accurate reflection of an economy's actual growth in production.

### 2.2 Theoretical Framework: Keynesian Theory of Public Expenditure

The Keynesian Theory of Public Expenditure was propounded by John Maynard Keynes in 1936 (Mensah & Adukpo, 2025). The main postulations of the theory emphasize that government spending can influence aggregate demand and overall economic activity. According to Keynes, when private sector demand is insufficient, public expenditure can compensate by increasing consumption and investment, which in turn raises national income and employment (Jumayeva, 2025). The theory also suggests that the size and allocation of government spending are important, as strategic investments and wage payments can generate a multiplier effect, stimulating further economic activity. Keynes highlighted that fiscal policies, including taxation and public expenditure, should be used actively to stabilize the economy, smooth business cycles, and promote sustainable growth (Jumayeva, 2025).

The Keynesian Theory of Public Expenditure is particularly relevant to this study because it provides a framework for understanding how public sector wage expenditure can influence economic growth in Nigeria. By increasing wages paid to public employees, the government injects money into the economy, which can boost consumption, create demand for goods and services, and stimulate production. This aligns with the theory's assertion that government spending can enhance aggregate demand, reduce unemployment, and support economic stability. Applying this theory helps explain why changes in public sector wages may have measurable effects on real and nominal GDP, and why managing wage expenditure is an important tool for promoting sustained growth.

### 2.3 Empirical Review

Kettaf (2025) investigated how real wages, human capital, and public expenditure—measured as a share of Gross Domestic Product (GDP)—influence economic growth across six OECD countries between 2002 and 2022. The study employed the Panel ARDL model using the Pooled Mean Group (PMG) estimator to assess both short- and long-term relationships among the variables. The results indicate that real wages negatively and significantly affect long-term economic growth, whereas human capital exerts a positive and significant impact. Public spending, although negatively related to growth, shows no significant long-term effect. Overall, the study highlights that real wages play a critical role in shaping the growth trajectory of OECD economies, and that government expenditure remains a key driver of economic stimulation.

Adebanjo et al. (2024) carried out research that considered Nigeria's prevailing economic conditions to determine an appropriate minimum wage while controlling for population growth. Using annual time-series data from the World Bank spanning 1991–2023, the authors applied an OLS regression model and found significant relationships between the minimum wage and macroeconomic variables such as inflation, unemployment, public debt, poverty rate, and GDP. The VAR model revealed notable short-term interactions among these variables, while the FMOLS model showed that inflation has a negative long-term influence on the minimum wage, whereas unemployment, public debt, GDP, and population growth exert positive long-term effects. The study concludes that determining Nigeria's new minimum wage requires a holistic approach that reflects the broader economic realities.

Caponi and Nobili (2024) explored how the scale of public-sector employment and the design of wage-setting institutions influence private-sector employment, unemployment, productivity, and income distribution. Their findings suggest that increasing public-sector jobs can temporarily reduce unemployment, especially in economically weak regions or during downturns, by boosting labor demand. However, the overall effect on growth and employment depends on how public-sector wages respond to productivity and cyclical changes. When wages are rigid, uniform across regions, and disconnected from productivity, the public sector may crowd out private employment and depress productivity. Conversely, when wages are flexible and regionally responsive, the public sector can act as a stabilizer, promoting fair labor-market outcomes and inclusive employment without undermining private-sector performance.

Consults (2023) examined how changes in the minimum wage affect economic growth in Osun State, Nigeria. The study focused on how variations in the minimum wage ratio influence per capita income, GDP, and inflation. Using multiple regression analysis via SPSS, the research found that Nigeria's national minimum wage remains below a livable threshold for many workers, indicating a weak link between earnings and essential living standards.

Mbaleki (2021) applied an autoregressive distributed lag model to evaluate both the short- and long-term effects of the public-service wage bill on South Africa's economic growth from 1983 to 2019, using data from the South African Reserve Bank. By controlling for other government expenditures and fixed capital formation, the study found no evidence of a negative relationship between the wage bill and growth. Although the wage bill contributes positively to growth, its effect is relatively modest compared with spending on health, education, and social protection, suggesting a crowding-out effect. The study recommends structural reforms to enhance fiscal efficiency and ensure sustainable public-sector wage management.

Basantwani et al. (2021) analyzed how Gross National Income (GNI) and public expenditure affect total employment and its public- and private-sector components in India. The study further examined ratios of public-to-private employment and their evolution over time. Time-series stationarity tests, including the Dickey-Fuller and Random Walk models, revealed that employment data are largely stationary and normally distributed, while GNI data are non-stationary. Findings from the Engle-Granger co-integration test suggest strong long-run relationships among public expenditure, employment, and GNI, with private-sector employment particularly sensitive to lagged income and expenditure trends.

Alege et al. (2021) investigated the macroeconomic consequences of Nigeria's four minimum-wage revisions using an extended New Keynesian Dynamic Stochastic General Equilibrium (DSGE) model that incorporated labor heterogeneity. Results show that wage increases neither improved household welfare nor significantly boosted growth, and instead strained government finances. The authors conclude that wage policy should be carefully structured to balance social welfare and fiscal sustainability.

Babalola et al. (2021) examined the link between wage policy and economic output in Nigeria from 1981 to 2018, employing an Autoregressive Distributed Lag model with variables such as minimum wage, investment, lending rates, credit to the private sector, inflation, and GDP. Findings revealed a positive relationship between minimum wage and investment in both the short and long term, as well as a positive long-term relationship between minimum wage and economic growth. However, the growth effect diminished when more variables were introduced, indicating that wage increases alone are insufficient to drive long-term growth. The study recommends periodic wage reviews consistent with economic cycles, along with complementary investments to mitigate inflationary and unemployment pressures.

Shubalyi and Petrukha (2021) analyzed wage dynamics and their influence on economic growth in the border regions of Poland and Ukraine, focusing on Lublin Voivodeship and Volyn Oblast between 2004 and 2020. Their findings reveal steady growth in average wages and gross regional product per capita, with Poland exhibiting consistently positive trends and Ukraine experiencing a minor decline during the 2009 crisis. Wage comparisons based on purchasing power parity show that real wages in Poland are more than double those in Ukraine, though the gap is gradually narrowing. Regression analysis demonstrates that wage increases stimulate proportional growth in regional GDP, highlighting the need for policies promoting sustained wage growth and transparency.

Xu et al. (2015) investigated the relationship between wage distribution and economic growth using a multi-agent simulation model. The study found a direct link between economic cycles and the ratio of minimum to average wages. Empirical evidence from U.S. data (1982–2013) confirmed a positive correlation between wage levels and economic growth. The results suggest that aligning minimum-wage policies with economic cycles can enhance labor efficiency, improve social welfare, and foster sustainable growth.

## 3.0 Methodology

This study adopted an ex-post facto research design to examine the effect of public sector wage expenditure on economic growth in Nigeria. The ex-post facto design is appropriate because it relies on existing historical data and does not require the manipulation of variables by the researcher (Ikwuo et al., 2025; Elom et al., 2025). The focus is on analyzing trends in public sector wage payments and their relationship with economic growth over the period 2000 to 2024.

Annual secondary time-series data from 2000 to 2024 were collected from the Central Bank of Nigeria Statistical Bulletins. This source was chosen for reliability, consistency, and comprehensive coverage of macroeconomic indicators relevant to Nigeria.

**Table 1 Description of Variables**

| Variable | Measurement | Description |
|---|---|---|
| EG | Naira (₦ Billion) | Economic growth, proxied by RGDP or NGDP |
| PWE | Naira (₦ Billion) | Total public sector wage expenditure |

Source: Researcher's Compilation (2025)

The study employed the Fully Modified Ordinary Least Squares (FMOLS) method to test for hypotheses in order to correct for serial correlation and ensure robustness in the long-run estimates. Stationarity of the variables is tested using the Augmented Dickey-Fuller (ADF) test. Granger causality test was used to determine the direction of influence between public sector wage expenditure and economic growth. The functional form of the model is shown below:

Economic Growth = f(PSWEt)

Where:
Economic Growth = Real GDP or Nominal GDP at time t

PSWEt = Public sector wage expenditure at time t

The econometric models are specified as:

$RGDP_t = \beta 0 + \beta 1 PWE_t + \mu t$

$NGDP_t = \beta 0 + \beta 1 PWE_t + \mu t$

Where:
RGDPt = Real GDP or Nominal GDP

NGDPt = Nominal GDP or Nominal GDP

PSWEt = Public sector wage expenditure at time t

β0, β1 = Parameters to be estimated

μt = Error term

t = Time index (2000–2024)

## 4.0 Data Analysis

### 4.1 Descriptive Analysis

**Table 4.1 Descriptive Statistics**

| | RGDP (₦' Billion) | NGDP (₦' Billion) | PSWE (₦' Billion) |
|---|---|---|---|
| Mean | 56332.15 | 88999.55 | 191.0352 |
| Median | 60670.05 | 72599.63 | 182.8100 |
| Maximum | 80606.53 | 277493.8 | 524.7000 |
| Minimum | 25430.42 | 7062.750 | 17.04000 |
| Std. Dev. | 17394.86 | 74816.79 | 134.0631 |
| Skewness | -0.396360 | 0.932927 | 0.886278 |
| Kurtosis | 1.754365 | 3.042401 | 3.004400 |
| Jarque-Bera | 2.270845 | 3.628341 | 3.272889 |
| Probability | 0.321286 | 0.162973 | 0.194671 |
| Sum | 1408304. | 2224989. | 4775.880 |
| Sum Sq. Dev. | 7.26E+09 | 1.34E+11 | 431349.7 |
| Observations | 25 | 25 | 25 |

Source: Eviews 10 Output (2025)

The Real Gross Domestic Product (RGDP) statistics in Table 4.1 provide a snapshot of Nigeria's economic performance over the period under study. The mean RGDP of ₦56.332 trillion indicates the average annual real output produced in the economy, while the maximum value of ₦80.607 trillion and the minimum of ₦25.430 trillion highlight the substantial variation in output levels over time. The standard deviation of ₦17.395 trillion shows that RGDP fluctuated moderately around its mean, suggesting that the economy experienced periods of both expansion and contraction. The skewness of -0.396 indicates a slight leftward tilt in the distribution, implying that lower values occurred more frequently than higher values, whereas the kurtosis of 1.754, being less than three, reflects a flatter distribution with fewer extreme deviations. The Jarque-Bera probability of 0.321 indicates that the RGDP data do not significantly deviate from a normal distribution, supporting the suitability of parametric analysis for the variable.

The Nominal Gross Domestic Product (NGDP) statistics in Table 4.1 reflect the total value of goods and services measured at current prices, capturing the effects of inflation alongside production. The mean NGDP of ₦88.999 trillion shows the average nominal output, while the maximum of ₦277.494 trillion and minimum of ₦7.063 trillion reveal a wide range of nominal economic activity, demonstrating the impact of price level changes over the years. The high standard deviation of ₦74.817 trillion indicates significant variability in NGDP, suggesting large fluctuations in nominal economic value likely driven by inflationary pressures. A skewness of 0.933 points to a rightward distribution, implying occasional very high NGDP values compared to the average. The kurtosis value of 3.042, slightly above three, suggests a distribution with moderately heavy tails, indicating occasional extreme NGDP observations. The Jarque-Bera probability of 0.163 confirms that the NGDP series is approximately normally distributed, supporting its use in statistical analysis.

The Public Sector Wage Expenditure (PSWE) statistics in Table 4.1 provide hints into the government's financial commitments to its employees. The mean PSWE of ₦191.0352 billion indicates the average annual wage payment to public sector workers, while the maximum of ₦524.7 billion and minimum of ₦17.04 billion show a large range, reflecting periods of substantial wage increases and lower expenditure in earlier years. The standard deviation of ₦134.0631 billion demonstrates considerable variability, suggesting

that wage expenditure has fluctuated widely across the study period. The positive skewness of 0.886 implies that higher wage payments occurred less frequently, with most observations clustered below the mean, while the kurtosis of 3.004 indicates a distribution very close to normal with moderate tail thickness. The Jarque-Bera probability of 0.195 suggests that PSWE is not significantly different from a normal distribution, which supports its appropriateness for regression and further econometric testing.

**Table 4.2 Unit Root Test**

| Variable | Null Hypothesis | ADF Test Statistic | Probability (Prob.*) | Critical Value (5%) | Integration Order |
|---|---|---|---|---|---|
| D(RGDP) | D(RGDP) has a unit root | -3.237768 | 0.0306 | -2.998064 | I(1) |
| D(NGDP,2) | D(NGDP,2) has a unit root | -4.954818 | 0.0007 | -3.004861 | I(2) |
| D(PSWE) | D(PSWE) has a unit root | -3.617472 | 0.0135 | -2.998064 | I(1) |

Source: Eviews 10 Output (2025)

The results of the Augmented Dickey-Fuller (ADF) unit root test presented in Table 4.2 indicate the stationarity properties of the variables used in the study. The first-differenced Real GDP (D(RGDP)) has an ADF test statistic of -3.238 with a probability value of 0.031, which is below the 5% critical value of -2.998, suggesting that D(RGDP) is stationary at first difference, or integrated of order one, I(1). The second-differenced Nominal GDP (D(NGDP,2)) has an ADF statistic of -4.955 with a probability of 0.001, which is less than the 5% critical value of -3.005, indicating that NGDP becomes stationary after second differencing and is integrated of order two, I(2). Similarly, the first-differenced Public Sector Wage Expenditure (D(PSWE)) has an ADF statistic of -3.617 and a probability of 0.014, which is below the critical value of -2.998, showing that PSWE is also stationary at first difference, I(1). These results confirm that the variables are non-stationary at their levels but achieve stationarity after differencing, making them suitable for further time series analysis and econometric modeling.

**Table 4.3 Granger Causality Test**

Pairwise Granger Causality Tests
Date: 11/09/25 Time: 03:03
Sample: 2000 2024
Lags: 1

| Null Hypothesis: | Obs | F-Statistic | Prob. |
|---|---|---|---|
| PSWE does not Granger Cause RGDP | 24 | 0.89238 | 0.3556 |
| RGDP does not Granger Cause PSWE | | 0.02798 | 0.8687 |
| PSWE does not Granger Cause NGDP | 24 | 0.56343 | 0.4612 |
| NGDP does not Granger Cause PSWE | | 9.48701 | 0.0057 |

Source: Eviews 10 Output (2025)

The results of the Granger causality test in Table 4.3 reveal the direction of influence between public sector wage expenditure (PSWE) and economic growth measured by real GDP (RGDP) and nominal GDP (NGDP) from 2000 to 2024. For RGDP, the probability values show that PSWE does not Granger cause RGDP ($p = 0.356$) and RGDP does not Granger cause PSWE ($p = 0.869$). Since both p-values are greater than the 5% significance level, there is no evidence of a predictive relationship between public sector wage expenditure and real GDP within the period under study, suggesting that changes in PSWE are not useful in forecasting RGDP and vice versa.

In contrast, the relationship between PSWE and NGDP shows a different pattern. The probability value for PSWE causing NGDP is 0.461, which is greater than 5%, indicating that PSWE does not significantly predict changes in NGDP. However, the probability for NGDP causing PSWE is 0.005, which is less than the 5% significance level. This indicates that changes in nominal GDP have a statistically significant predictive effect on public sector wage expenditure, implying that government wage payments may respond to changes in overall nominal economic output. Therefore, while PSWE does not appear to influence economic growth, nominal growth significantly influences government wage decisions.

### 4.2 Test of Hypotheses

#### 4.2.1 Test of Hypothesis I

**$H_{01}$:** Public sector wage expenditure has no significant effect on real GDP in Nigeria.

**Table 4.4 Test of Hypothesis I**

Dependent Variable: RGDP
Method: Fully Modified Least Squares (FMOLS)
Date: 11/09/25 Time: 03:02
Sample (adjusted): 2001 2024
Included observations: 24 after adjustments
Cointegrating equation deterministics: C
Long-run covariance estimate (Bartlett kernel, Newey-West fixed bandwidth = 3.0000)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| PSWE | 116.0663 | 22.38091 | 5.185951 | 0.0000 |
| C | 35505.20 | 5295.148 | 6.705232 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.703117 | Mean dependent var | 57619.72 |
| Adjusted R-squared | 0.689622 | S.D. dependent var | 16507.24 |
| S.E. of regression | 9196.440 | Sum squared resid | 1.86E+09 |
| Long-run variance | 2.00E+08 | | |

Source: Eviews 10 Output (2025)

Table 4.4 presents the FMOLS results for testing the effect of public sector wage expenditure (PSWE) on real GDP (RGDP) in Nigeria. The model shows an R-squared of 0.703, indicating that approximately 70.3% of the variation in RGDP over the period 2001–2024 is explained by changes in public sector wage expenditure. This suggests that the model has good explanatory power and the inclusion of PSWE is relevant for understanding the fluctuations in real economic output. The constant term (C) has a coefficient of 35,505.20 and a probability of 0.000, which is significant at the 5% level. This indicates that even when public sector wage expenditure is zero, RGDP would, on average, be ₦35.505 trillion, reflecting the autonomous level of economic activity in the Nigerian economy independent of wage payments.

The coefficient of PSWE is 116.0663 with a p-value of 0.000, indicating a positive and statistically significant effect at the 5% level. This coefficient can be interpreted as the marginal effect of public sector wage expenditure on RGDP. Specifically, a one-trillion-naira increase in PSWE is associated with an increase of ₦116.066 billion in RGDP, holding other factors constant. This shows that public sector wage payments contribute positively to real economic output, supporting the view that government spending on wages can stimulate production by increasing household income, consumption, and demand for goods and services. Given the p-value of 0.000, we reject the null hypothesis ($H_{01}$) and conclude that public sector wage expenditure has a significant positive effect on real GDP in Nigeria.

#### 4.2.2 Test of Hypothesis II

**$H_{02}$:** Public sector wage expenditure has no significant effect on nominal GDP in Nigeria.

**Table 4.5 Test of Hypothesis II**

Dependent Variable: NGDP
Method: Fully Modified Least Squares (FMOLS)
Date: 11/09/25 Time: 03:02
Sample (adjusted): 2001 2024
Included observations: 24 after adjustments
Cointegrating equation deterministics: C
Long-run covariance estimate (Bartlett kernel, Newey-West fixed bandwidth = 3.0000)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| PSWE | 570.9180 | 39.17455 | 14.57369 | 0.0000 |
| C | -19981.94 | 9268.393 | -2.155923 | 0.0423 |

| | | | |
|---|---|---|---|
| R-squared | 0.936990 | Mean dependent var | 92413.58 |
| Adjusted R-squared | 0.934126 | S.D. dependent var | 74410.11 |
| S.E. of regression | 19098.07 | Sum squared resid | 8.02E+09 |
| Long-run variance | 6.14E+08 | | |

Source: Eviews 10 Output (2025)

Table 4.5 presents the FMOLS results for testing the effect of PSWE on nominal GDP (NGDP). The model has an R-squared of 0.937, meaning that about 93.7% of the variation in NGDP is explained by PSWE, which demonstrates very strong explanatory power. The constant term (C) is -19,981.94 with a probability of 0.0423, which is significant at the 5% level. The negative constant suggests that in the absence of public sector wage expenditure, nominal GDP would theoretically be negative, implying that wage payments play a crucial role in sustaining the nominal economic value in Nigeria by supporting consumption and spending in the economy.

The coefficient of PSWE is 570.9180 with a p-value of 0.000, showing a strong positive and statistically significant effect at the 5% level. This indicates that a one-trillion-naira increase in public sector wage expenditure is associated with an increase of ₦570.918 billion in NGDP, all else being equal. The result demonstrates that public sector wage payments have a larger marginal effect on nominal GDP compared to real GDP, likely because NGDP captures both changes in output and price levels. Therefore, we reject the null hypothesis ($H_{02}$) and conclude that PSWE has a significant positive effect on nominal GDP in Nigeria, highlighting its importance in influencing the overall monetary value of the economy.

### 4.3 Discussion of Findings

The finding that public sector wage expenditure has a positive and significant effect on real GDP in Nigeria can be explained by the role that wage payments play in stimulating domestic demand and consumption. When the government disburses wages to public sector employees, households gain additional income, which increases their purchasing power and encourages spending on goods and services. This spending can enhance production across sectors, thereby raising the overall output of the economy. The result is consistent with studies such as Babalola et al. (2021) and Adebanjo et al. (2024), who found that wage increases contribute positively to economic activity and investment in Nigeria. Similarly, Shubalyi and Petrukha (2021) and Xu et al. (2015) demonstrated that higher wages stimulate proportional growth in regional and national GDP in other contexts, indicating a strong link between wage payments and real output. Conversely, Kettaf (2025) found that real wages negatively influenced long-term growth in OECD countries, suggesting that contextual factors like economic structure and productivity may mediate the effect of wages on real output. Overall, the result highlights the capacity of public sector wages to enhance production and aggregate output in the Nigerian economy.

Regarding nominal GDP, the positive and significant effect of public sector wage expenditure indicates that wage payments not only support production but also affect the monetary value of the economy. An increase in wages raises aggregate spending and demand, which contributes to higher nominal output by influencing both prices and total economic transactions. This is supported by Mbaleki (2021), who found that public-sector wage bills in South Africa positively influenced economic growth, although modestly compared to other government expenditures. Similarly, Caponi and Nobili (2024) emphasized that public-sector wages can stabilize economic activity by supporting labor demand, particularly in weaker regions. Findings from Basantwani et al. (2021) in India also align with this, showing that public expenditure is linked to increases in gross national income and employment levels. The positive effect on nominal GDP in Nigeria may also reflect the cyclical responsiveness of wages to economic conditions, reinforcing overall liquidity and monetary activity in the economy. While Alege et al. (2021) and Consults (2023) noted that wage policy alone may not improve welfare or growth, the FMOLS results in this study suggest that aggregate public sector wage payments have a tangible effect on both real and monetary measures of the economy.

## 5.0 Conclusion and Recommendation

### 5.1 Conclusion

The findings of this study suggest that government spending on public sector wages plays an important role in shaping economic activity in Nigeria. By increasing wage payments, the government injects substantial purchasing power into the economy, which can enhance household consumption, stimulate demand for goods and services, and encourage production across different sectors. This

process not only supports the creation of wealth in terms of real output but also reinforces the overall monetary value of the economy by influencing nominal measures of economic performance. The strong responsiveness of both real and nominal GDP to public sector wage expenditure indicates that wage payments serve as a significant driver of economic stability and growth, providing a mechanism through which government fiscal actions can directly affect national economic aggregates. Furthermore, the high degree of explanatory power of the models highlights that fluctuations in public sector wage expenditure account for a meaningful portion of economic variations over time, highlighting the importance of wage-related fiscal activity in sustaining macroeconomic dynamics and influencing the broader financial and social environment in Nigeria.

### 5.2 Recommendations

Based on the finding that public sector wage expenditure has a positive and significant effect on real GDP in Nigeria, it is recommended that the Federal Ministry of Finance and the Budget Office of the Federation ensure that public sector wage payments are timely and efficiently disbursed. By maintaining consistent and predictable wage payments, these agencies can support household consumption and stimulate productive activities in the economy, thereby sustaining growth in real output and enhancing overall economic stability.

In light of the finding that public sector wage expenditure positively and significantly affects nominal GDP, the Central Bank of Nigeria and the Ministry of Finance should carefully coordinate fiscal and monetary policies to align wage disbursements with broader economic objectives. Ensuring that wage expenditures are structured in a way that supports price stability while fostering aggregate spending will help maximize the contribution of public sector wages to nominal economic value, strengthen government influence on economic activity, and maintain a stable monetary environment conducive to growth.

### 5.3 Contribution to Knowledge

This study contributes to the literature by providing a comprehensive long-term analysis of the effect of public sector wage expenditure on Nigeria's economic growth, covering a period of 25 years from 2000 to 2024. Unlike previous studies such as Kettaf (2025) and Xu et al. (2015), which focused on developed economies or simulated models, or Adebanjo et al. (2024), Consults (2023), and Alege et al. (2021), which examined minimum wage policies and household welfare, this study explicitly investigates the broader impact of total public sector wage payments on both real and nominal GDP. It extends the work of Caponi and Nobili (2024) and Mbaleki (2021) by considering long-term macroeconomic effects in the specific context of Nigeria, rather than short-term or regionally limited analyses. In addition, it builds on the findings of Babalola et al. (2021), Basantwani et al. (2021), and Shubalyi and Petrukha (2021) by focusing on country-specific dynamics and providing empirical evidence for the aggregate economic growth implications of public sector wage expenditure. By employing Fully Modified Ordinary Least Squares (FMOLS) and Granger causality techniques, the study offers robust results that deepen understanding of how wage policies influence economic performance, filling a significant gap in the Nigerian fiscal policy literature. This contribution provides policymakers with evidence-based guidance for managing public sector wages in a way that supports sustainable economic growth.

### 5.4 Limitations of the Study and Suggestion for Further Studies

This study is limited by its reliance on secondary data from the Central Bank of Nigeria, which may not capture all aspects of public sector wage expenditure or informal economic activities. The analysis focuses only on annual data from 2000 to 2024, which provides a relatively small sample size of 25 observations. Additionally, the study examines only the aggregate effect of wage expenditure on real and nominal GDP, without considering other factors such as regional variations, sector-specific productivity, or the quality of public services. These limitations may affect the generalizability of the findings.

Future research could expand the scope by including more detailed data on public sector wages across different regions and sectors in Nigeria. Studies could also investigate the interaction between wage expenditure and other fiscal policies, such as capital investment or social spending, to understand their combined effect on economic growth. Using longer time series or quarterly data could improve the accuracy of estimates, and qualitative studies could explore how wage management and productivity influence economic performance. This would provide a more comprehensive understanding of the relationship between government wages and growth.

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