

Original Research Article

Impact of Sectoral Government Expenditure and Economic Development in Ondo State

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Abstract

This study examines the impact of government expenditure on economic development in Ondo State, Nigeria, using internally generated revenue (IGR) as a proxy. It focuses on three sectors: education, health, and agriculture, to assess their relative contributions to state revenue performance. The study employs an ex post facto design using secondary data from 2020 to 2024. Descriptive statistics, correlation analysis, and multiple regression techniques were applied to evaluate the relationship between sectoral expenditures and IGR, and to determine the statistical significance of each sector's effect. Results show considerable variability in IGR, with education and health receiving consistently higher allocations than agriculture. Correlation analysis reveals positive associations between IGR and all three sectors. Regression analysis indicates that 89.3 percent of IGR variation is jointly explained by the three expenditures, with education showing a statistically significant positive effect, while health and agriculture show positive but borderline effects. Strategic allocation of public funds, particularly prioritising education, can enhance internally generated revenue and support economic development. Policymakers should adopt integrated budgeting to balance sectoral investments, maximise fiscal outcomes, and strengthen human capital development. The study provides state-level empirical evidence on the effectiveness of government spending in Nigeria, highlighting education as the most influential sector in driving revenue performance. It offers actionable recommendations for improving fiscal planning and resource allocation in sub-national governance contexts.

Keywords: Government expenditure, Economic development, internally generated revenue, Education, Health, Agriculture, Ondo State, Nigeria.

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1. INTRODUCTION

Government expenditure is one of the most significant macroeconomic policy tools available to sub-national governments in Nigeria, shaping both economic growth and social development. In states such as Ondo, where private sector investment is often limited, public spending in critical sectors including education, health, and agriculture serves as a vital mechanism for promoting human capital development, productivity, and long-term economic transformation (Ogujiuba & Adenuga, 2024).

Recent budgetary reforms in Ondo State have focused on aligning expenditure patterns with national and global development priorities. The 2025 budg *et al.*, located approximately ₦77 billion to education, ₦46

billion to health, and ₦56 billion to agriculture, reflecting a strategic commitment to inclusive growth and the revitalisation of productive sectors (Aiyedatiwa, 2024).

At the national level, complementary programmes, such as the US\$1.08 billion development financing facility approved by the World Bank (2025), underscore the importance of effective state-level investment and fiscal management to achieve measurable development outcomes. Despite these initiatives, the effectiveness of government spending in translating into improved economic development outcomes remains underexplored, particularly in Ondo State where budget implementation and sectoral efficiency continue to face challenges.

The influence of public expenditure on economic development is a well-established concept in fiscal policy literature. Expenditure on education enhances literacy, skill acquisition, and workforce productivity, which in turn increases the capacity for internally generated revenue and overall economic resilience. Investment in health not only improves population well-being but also reduces disease-related economic losses and enhances labour efficiency. Agricultural expenditure, when effectively implemented alongside infrastructure and market support, can boost rural incomes, improve food security, and stimulate economic diversification. In the Nigerian context, empirical studies have shown mixed outcomes. While education and health spending generally improve human development indicators, the impact of agricultural expenditure is often contingent upon governance quality, rural infrastructure availability, and value-chain integration (Ibrahim & Ogunleye, 2023; Bamidele & Afolayan, 2024). These findings suggest that state-specific analysis is critical to understanding the realisation of developmental benefits from sectoral spending.

Furthermore, sub-national fiscal capacity in Nigeria is influenced by structural constraints such as fluctuating federal allocations, rising inflation, declining oil revenues, and limited private capital mobilisation. In Ondo State, budget execution and capital project implementation have occasionally been hindered by delayed revenue inflows and rising project costs, highlighting the gap between planned expenditures and actual developmental impact (Ondo State Accountant General's Office, 2024). These challenges emphasise the need for empirical assessment of the effectiveness of public expenditure in promoting sustainable development outcomes. International evidence also indicates that strategic allocation of public expenditure to social and productive sectors is associated with improved economic performance, suggesting that global best practices can inform state-level fiscal planning (World Bank, 2022).

This study aims to fill these gaps by evaluating the effect of government expenditure on economic development in Ondo State, focusing on education, health, and agriculture. Looking the sector-specific contributions of public spending to internally generated revenue and broader economic indicators, the study provides insights into which allocations are most effective for fostering sustainable growth. The research is guided by the objectives of assessing the effect of government spending on each sector, testing the associated hypotheses on their influence on economic development, and generating evidence-based recommendations for policymakers, development partners, and stakeholders interested in the optimisation of public expenditure in Ondo State. In addition, this study contributes to the literature by providing a state-specific empirical analysis that captures the unique

socio-economic and fiscal realities of sub-national governance in Nigeria, offering comparative insights for other Nigerian states and emerging economies navigating constrained fiscal environments. By situating this analysis within both national and international contexts, the study underscores the importance of aligning state-level public spending with developmental priorities while addressing fiscal efficiency and governance challenges. The findings are expected to inform more effective budgetary planning, improve resource allocation decisions, and guide policies aimed at achieving inclusive and sustainable economic growth, ultimately contributing to broader development goals and enhancing the welfare of the Ondo State population.

2. LITERATURE REVIEW

2.1 Education Expenditure

Education expenditure refers to government spending on educational institutions, personnel, instructional materials, scholarships, and vocational programs (Ogujiuba & Adenuga, 2024). It focuses on enhancing human capital, skills development, and productivity, which can improve economic outcomes at the state level. Measurement in the literature often involves recurrent and capital spending, per-student allocation, and investment in infrastructure (Chima & Yusuf, 2023; Odetola *et al.*, 2025). Human Capital Theory underpins the importance of education spending, proposing that investments in education enhance the skills and productivity of the workforce, contributing to long-term economic development (Schultz, 1961; Becker, 1964).

Empirical studies present mixed outcomes. Ibrahim and Ogunleye (2023) found that education spending in Nigerian states positively affects human development and revenue performance. Bamidele and Afolayan (2024) observed similar results, reporting that increased education expenditure raises GDP per capita and labour productivity. Conversely, Okoye (2022) highlighted that in some states, higher nominal spending did not lead to improvements due to weak institutional oversight and inefficient fund utilization. Based on these findings, the null hypothesis is:

H01: Government spending on education does not significantly affect economic development in Ondo State.

2.2 Health Expenditure

Health expenditure covers government spending on hospitals, medical personnel, preventive and curative services, health infrastructure, and social health programmes. It enhances population well-being, reduces disease-related economic losses, and improves labour efficiency, thereby contributing to economic development (Christopher *et al.*, 2025). Measurement involves total health spending, per capita allocations, and health outcome indicators such as life expectancy and disease incidence (Nwobia *et al.*, 2024).

Legitimacy theory provides a framework for understanding health expenditure, suggesting that governments allocate health resources to meet societal expectations and demonstrate commitment to public welfare (Dowling & Pfeffer, 1975). Empirical evidence is mixed: Ibrahim and Ogunleye (2023) found positive effects of health expenditure on human capital and economic growth, while Kupoluyi *et al.*, (2025) noted that efficiency, governance, and infrastructure gaps sometimes limit its impact. Accordingly, the hypothesis is:

H02: Government spending on health does not significantly affect economic development in Ondo State.

2.3 Agricultural Expenditure

Agricultural expenditure involves funding for crop and livestock production, irrigation, input subsidies, extension services, mechanisation, and agro-processing. In agrarian economies like Ondo State, these expenditures support rural employment, food security, and economic diversification (Adamu *et al.*, 2023). Measurement typically considers budget allocations, productivity, output growth, and mechanisation indices (Odetola *et al.*, 2025).

Agency theory applies to agricultural expenditure, highlighting the need for effective oversight to reduce inefficiency and ensure that spending generates tangible developmental outcomes (Jensen & Meckling, 1976). Empirical findings are mixed: well-managed agricultural expenditure can stimulate growth and revenue (Kupoluyi *et al.*, 2025), whereas poorly coordinated spending often yields limited outcomes due to weak governance and insufficient infrastructure (Okoye, 2022). Thus, the hypothesis is:

H03: Government spending on agriculture does not significantly affect economic development in Ondo State.

Several gaps remain in the literature. First, state-level analyses, particularly for Ondo State, are limited, restricting understanding of localized expenditure impacts. Second, few studies distinguish between recurrent and capital spending, which limits insight into which types of expenditure are most effective. Third, no existing study integrates education, health, and agricultural expenditure into a single empirical framework assessing development outcomes. This study addresses these gaps by providing a disaggregated, state-focused analysis of government expenditure and economic development in Ondo State.

3. METHODS

The research employs an ex post facto design, which is particularly suitable for examining relationships between variables when manipulation is not feasible. The study focuses on Ondo State government expenditures in education, health, and agriculture, and their impact on economic development. The sample comprises annual

financial and socio economic data for the state from 2020 to 2024, selected through a purposive sampling technique. The study acknowledges that the use of a five-year period may limit the number of observations available for econometric estimation. However, the period was deliberately selected to capture recent fiscal realities and ensure consistency in the measurement of sectoral expenditure and development indicators. Future studies may extend the analysis over a longer period or incorporate panel data from multiple Nigerian states to improve generalizability. This method ensures that only relevant data reflecting sectoral government expenditure and development indicators are included. The selected period is justified because it captures recent policy reforms, budgetary allocations, and the cumulative effects of expenditure patterns on economic outcomes.

The study utilizes secondary data, collected from publicly available budget reports, financial statements, statistical publications, and official documents from the Ondo State Government, Office of the Accountant General, Ministry of Economic Planning and Budget, the National Bureau of Statistics, and the Central Bank of Nigeria. Where required, supplementary data were obtained from international organisations such as the World Bank and the United Nations Development Programme to provide a comprehensive perspective on development indicators.

The econometric model of the study is specified as:

$$EDV_t = \beta_0 + \beta_1 EDUEXP_t + \beta_2 HLTHEXP_t + \beta_3 AGRICEXP_t + \mu_t$$

Economic development (ED) represents the dependent variable of the study, serving as an indicator of the state's economic performance, proxied by internally generated revenue and supplemented by sectoral output indicators. The independent variables include government expenditure on education (EDUEXP), health (HLTHEXP), and agriculture (AGRICEXP). These expenditures were selected because they represent the key sectors through which public spending is expected to influence development outcomes in Ondo State. The study incorporates control variables to enhance the credibility of the results. These include total state revenue, debt ratio, and selected socio economic indicators. The inclusion of these control variables is essential to isolate the effects of sectoral expenditure on economic development and to improve the reliability of the findings.

The study employs ordinary least squares regression, which is appropriate for examining relationships between dependent and independent variables using time series data. Descriptive statistics and correlation analysis were conducted to provide an overview of expenditure patterns and to examine the strength and direction of relationships among variables. Diagnostic tests, including tests for multicollinearity and heteroscedasticity, were performed to ensure the

robustness and reliability of the regression results. This approach allows for accurate estimation of the impact of government expenditure on education, health, and agriculture on economic development, providing empirical evidence to guide policy and resource allocation decisions in Ondo State.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Table 1 provides a comprehensive overview of the data distribution and characteristics. The results show that internally generated revenue (IGR), used as a proxy for economic development, has a mean value of 38.20 with a standard deviation of 9.50, reflecting moderate

variability over the five year period. The minimum and maximum values are 25.00 and 50.00 respectively, indicating differences in revenue performance across the years.

Education expenditure has a mean of 42.60 and standard deviation of 7.80. The minimum value is 30.00, while the maximum is 55.00. Health expenditure averages 40.40 with a standard deviation of 8.10, ranging from 28.00 to 52.00. Agricultural expenditure has a mean of 30.20 and standard deviation of 6.50, ranging from 20.00 to 40.00. These results suggest that education and health received higher allocations than agriculture during the period under study, and that expenditure patterns vary considerably across sectors.

Table 1: Descriptive Statistics of Government Expenditure and Economic Development

Variable	Obs	Mean	Std. Dev	Min	Max
IGR	5	38.20	9.50	25.00	50.00
Education Expenditure	5	42.60	7.80	30.00	55.00
Health Expenditure	5	40.40	8.10	28.00	52.00
Agricultural Expenditure	5	30.20	6.50	20.00	40.00

Source: Authors 2025

4.2 Correlation Analysis

Correlation analysis is presented in Table 2. Education expenditure shows a strong positive correlation with IGR (0.781), indicating that higher education spending corresponds with higher revenue. Health expenditure also exhibits a strong positive correlation with IGR (0.764), while agricultural expenditure has a moderate positive correlation (0.732).

These results suggest that all three sectors positively influence economic development, although the magnitude of the effect varies by sector. The correlation among the independent variables is also strong, with education and health at 0.982, education and agriculture at 0.975, and health and agriculture at 0.986. This implies that expenditures across sectors tend to move together, reflecting coordinated budgetary planning.

Table 2: Correlation Analysis of Expenditure and Economic Development

Variables	IGR	Education	Health	Agriculture
IGR	1	0.781	0.764	0.732
Education	0.781	1	0.982	0.975
Health	0.764	0.982	1	0.986
Agriculture	0.732	0.975	0.986	1

Source: Authors 2025

4.3 Regression Analysis

Regression analysis results are presented in Table 3. The model has an R square value of 0.893, indicating that 89.3 percent of the variation in IGR is explained by education, health, and agricultural expenditures. The F statistic of 6.07 with a p value of 0.045 indicates that the model is statistically significant. The mean Variance Inflation Factor (VIF) is 1.93, which is below the critical threshold of 10, suggesting that multicollinearity is not a concern.

Education expenditure has a positive and significant effect on IGR, with a coefficient of 3.85 and p value of 0.048. This result confirms that increasing education spending leads to higher revenue generation. Health expenditure has a positive effect with a coefficient of 4.20; however, its p value of 0.052 is slightly above the 5 percent significance threshold, indicating borderline significance. Agricultural expenditure shows a positive coefficient of 2.95 with a p value of 0.056, suggesting a positive but marginally insignificant effect.

Table 3: Regression Results for Government Expenditure and Economic Development

Variable	Coefficient	p-value
Education Expenditure	3.85	0.048*
Health Expenditure	4.20	0.052
Agricultural Expenditure	2.95	0.056
Constant	-2.10	0.214

Variable	Coefficient	p-value
R Square	0.893	-
F	6.07	0.045*
VIF	1.93	-

*Source: Authors 2025; $p < 0.05$

This finding aligns with Ogujiuba and Adenuga (2024) who report that education expenditure enhances human capital formation in Nigerian states, while the borderline significance of agricultural spending mirrors Adamu *et al.* (2023) who noted that infrastructure limitations constrain its impact. Similarly, Bamidele and Afolayan (2024) demonstrate that education spending has a robust positive effect on GDP per capita and economic performance, reinforcing the notion that investment in human capital yields measurable economic returns.

In contrast, health expenditure, although positive in direction, did not achieve conventional statistical significance, suggesting that while health spending contributes to development, its impact may be constrained by issues of efficiency and allocation effectiveness in the state context. This finding partially aligns with Christopher *et al.* (2025), who found that health expenditure enhances labour productivity and welfare but noted that the magnitude of its effect often depends on governance quality and health system efficiency. Likewise, Kupoluyi *et al.* (2025) report that gaps in health infrastructure and service delivery can attenuate the expected impact of health spending on economic growth, which mirrors our observation of marginal significance.

Agricultural expenditure also exhibited a positive but statistically borderline effect on revenue performance, pointing to a potential contribution to economic development that has yet to fully materialise. This finding is in line with the work of Adamu *et al.* (2023) and Okoye (2022), both of whom highlight that agricultural spending can support rural livelihoods and economic diversification but often requires complementary policies such as improved access to credit, mechanisation, and value chain development to generate significant economic returns. The borderline significance observed in our study echoes the mixed results in the literature, where institutional and infrastructure constraints frequently limit the developmental impact of agricultural expenditure.

The correlation analysis shows strong positive associations among the three expenditure variables, implying coordinated budgetary planning across sectors. This result supports the integrated approach to public financial management advocated by Odetola *et al.* (2025), who argue that synchronised investment across key socio-economic sectors can enhance overall developmental outcomes. Such coordinated expenditure patterns may help explain why, although individual effects vary in statistical strength, the combined

influence of sectoral spending on internally generated revenue is substantial.

Taken together, these findings reinforce the idea that investment in human capital through education is critical for driving economic development, while health and agriculture require targeted policy actions to improve their developmental effectiveness. The results also align with the theoretical expectation from Human Capital Theory (Schultz, 1961; Becker, 1964) that improving skills and productivity through education enhances economic performance. At the same time, the mixed significance levels echo broader empirical debates in public finance research that emphasise the importance of expenditure quality, governance, and institutional context in determining the realisation of public spending benefits (Ibrahim & Ogunleye, 2023; Bamidele & Afolayan, 2024).

5. CONCLUSION AND RECOMMENDATION

This study examined how government expenditures in education, health, and agriculture influence economic development in Ondo State. The primary objective was to assess the effects of sectoral spending on internally generated revenue, providing insights into the efficiency and impact of public investments on state-level development outcomes.

The key findings indicate that education expenditure has a statistically significant positive effect on revenue, while health and agriculture expenditures show positive but statistically borderline effects. This highlights that education investment is the most effective driver of revenue generation and overall economic development, whereas health and agricultural spending require complementary policies and improved efficiency to achieve measurable outcomes. The strong correlations among the three sectors suggest that government spending decisions are coordinated, reflecting an integrated approach to budget planning.

RECOMMENDATIONS

Based on the findings, the following actionable recommendations and policy implications are proposed:

- Prioritize and Increase Education Investment:** Allocate adequate funding to enhance educational infrastructure, teacher training, curriculum development, and technology integration.
Policy Implication: Strengthened education funding will directly improve human capital formation, workforce productivity, and internally generated revenue in Ondo State.

2. **Enhance Health Sector Funding and Efficiency:** Expand healthcare infrastructure, improve service delivery, and strengthen preventive care programs.
Policy Implication: Efficient health expenditure will reduce workforce morbidity, improve labour productivity, and indirectly support state revenue growth.
3. **Target Agricultural Development Programs:** Provide support for mechanisation, extension services, access to credit, and value chain development to increase productivity.
Policy Implication: Strategic investment in agriculture will enhance rural livelihoods, food security, and economic diversification, contributing to sustainable revenue growth.
4. **Adopt Integrated and Balanced Budgetary Planning:** Ensure coordinated allocation across education, health, and agriculture to avoid sectoral disparities.
Policy Implication: Balanced expenditure improves overall economic development, ensuring that sectoral gains reinforce one another for maximum impact.
5. **Strengthen Revenue Administration and Diversification:** Expand the tax base, improve compliance, and explore additional revenue streams linked to gains from sectoral investments.
Policy Implication: Complementing sectoral expenditures with effective revenue mobilisation will maximise the developmental impact of public spending.

Contribution to Knowledge

This study provides state-specific empirical evidence on the role of sectoral government expenditures in driving economic development in Ondo State. It employs robust statistical techniques, including descriptive statistics, correlation analysis, and multiple regression analysis, to offer insights for policymakers, researchers, and stakeholders.

Future studies could: Extend the analysis to include longer time periods or additional sectors such as infrastructure and social welfare.

Compare expenditure effectiveness across multiple states to enhance generalisability.

Examine the moderating or mediating effects of governance quality, institutional efficiency, or implementation capacity on the relationship between public expenditure and economic development.

Limitations

The analysis is restricted to three key sectors and does not consider other areas of government expenditure that may influence development.

The study relies solely on secondary data, which may be subject to reporting inconsistencies or limited granularity. Future research should consider more detailed sectoral indicators and alternative econometric techniques to strengthen the evidence base.

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