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ECONOMIC GROWTH AND SECTORAL PUBLIC EXPENDITURE IN SUB-SAHARAN AFRICA: SHORT AND LONG-RUN DYNAMICS

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ABSTRACT

This study examines the short-run and long-run effects of sectoral public expenditure on economic growth in Sub-Saharan Africa (SSA) from 2000 to 2023. Rather than treating government expenditure as a homogeneous fiscal aggregate, the study disaggregates public spending into education, health, defence and public debt servicing to determine whether their growth effects differ across expenditure categories and time horizons. Panel data covering 16 SSA countries were analysed using panel unit root tests, panel cointegration techniques and the Panel Autoregressive Distributed Lag framework. The stationarity results indicate that the variables become stationary after first differencing while the cointegration tests establish a long-run relationship between sectoral public expenditure and economic growth. The Panel ARDL results reveal heterogeneous effects across expenditure components. Education expenditure exhibits a positive but statistically insignificant relationship with economic growth in both the short run and long run, suggesting that increased educational spending has not generated a sufficiently strong measurable growth response across the sampled countries. Health expenditure displays different short-run and long-run effects, with the long-run relationship becoming positive. Defence expenditure also exhibits significant effects on economic growth while public debt servicing reflects the fiscal implications associated with meeting debt obligations. The error correction mechanism confirms convergence towards long-run equilibrium following short-run disturbances. The findings demonstrate that the growth consequences of public expenditure in SSA depend substantially on expenditure composition and time horizon. Fiscal policy should therefore prioritise the quality, efficiency and productive allocation of sectoral expenditure rather than relying principally on increases in aggregate government spending.

KEYWORDS: *Public Expenditure, Economic Growth, Sectoral Expenditure, Sub-Saharan Africa*

1. INTRODUCTION

Economic growth remains a central objective of fiscal policy because sustained increases in output provide the basis for employment creation, income improvement and broader socioeconomic development. Public expenditure occupies a central position in the relationship between fiscal policy and economic development. Governments allocate resources to education, healthcare, security, infrastructure and other services with the expectation that these expenditures will improve social welfare and support economic activity. The extent to which public spending actually promotes economic growth, however, remains contested. While government expenditure can stimulate aggregate demand and provide productive public inputs, inefficient allocation, weak implementation and rising fiscal obligations can reduce its contribution to economic performance.

The theoretical basis for a positive expenditure-growth relationship 1s well established Keynes (1936) argues that government expenditure can stimulate aggregate demand, employment and output, particularly when private demand is inadequate Public spending can therefore operate as an important stabilisation instrument Beyond this short-run demand effect, expenditure on productive sectors may strengthen an economy's supply capacity Education and health expenditure can improve human capital while expenditure that contributes to security can create an environment conducive to investment and production The growth consequences of government expenditure are consequently likely to depend on both its compos ton and the period over which its effects are evaluated.

These considerations are especially relevant to Sub-Saharan Africa (SSA) Governments in the region confront substantial development needs while operating within relatively constrained fiscal environments Rapid population

growth places increasing pressure on education and healthcare systems. Security challenges require substantial government resources while growing public indebtedness has increased debt-servicing obligations in several countries. At the same time, governments must provide infrastructure and other public services required for economic transformation. These competing demands make expenditure allocation an important policy issue.

The challenge is not simply one of increasing public expenditure. Fiscal resources are scarce and expenditure allocated to one sector has an opportunity cost in another. A sustained increase in debt servicing, for example, can reduce resources available for human-capital development. Defence expenditure may provide economic benefits where it improves security although excessive allocations can divert resources from education, healthcare and productive infrastructure. Education and health expenditure are conventionally regarded as productive but their contribution to growth depends on whether budgetary allocations translate into improvements in skills, health outcomes and labour productivity.

Disaggregating government expenditure is therefore important. Aggregate expenditure measures can conceal substantial differences among spending categories. An increase in total government expenditure arising predominantly from debt servicing cannot reasonably be expected to have the same growth consequences as an equivalent increase in productive human-capital investment. Similarly, the economic effects of education expenditure may take longer to materialise than those of other fiscal interventions. Short-run and long-run estimates are therefore necessary to obtain a more complete understanding of the expenditure-growth relationship. Empirical research has not produced a uniform conclusion. Nurudeen and Usman (2010) found that different components of government expenditure have differing implications for economic growth in Nigeria, Egbetunde and Fasanya (2013) also examined public expenditure and economic growth using an autoregressive distributed lag approach. At the regional level, Kimaro et al. (2017) analysed government expenditure, efficiency and economic growth among low income SSA countries while Ogundari and Awokuse (2018) examined the contributions of education and health dimensions of human capital to growth. Kolapo et al. (2021) considered the expenditure-growth relationship in SSA from the perspective of Wagner's law. The diversity of findings suggests that expenditure composition, institutional conditions, country characteristics and estimation methods all influence empirical outcomes.

A further issue concerns the temporal dimension of fiscal effects. Public expenditure may generate different outcomes in the short run and long run. Education expenditure provides a particularly clear example because resources invested in schooling today may influence economic output only after students enter the labour market. Health expenditure can similarly affect growth gradually through improvements in labour productivity and life expectancy. Conversely, debt-servicing expenditure may exert more immediate fiscal pressure by absorbing resources that could otherwise finance productive activities. A methodology that imposes identical short-run and long-run effects may therefore obscure economically important differences.

Against this background, this study examines the short-run and long-run effects of sectoral public expenditure on economic growth in 16 SSA countries between 2000 and 2023. Public expenditure is disaggregated into government expenditure on education, health, defence and public debt servicing. Panel unit root and cointegration procedures are combined with the Panel Autoregressive Distributed Lag (PARDL) framework to determine both long-run equilibrium relationships and short-run adjustments.

2. LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Sectoral Public Expenditure

Sectoral public expenditure refers to government spending disaggregated according to the major functional areas in which public resources are allocated. Rather than treating public expenditure as a single aggregate variable, the sectoral approach distinguishes expenditure according to the specific economic and social functions it is intended to perform. This distinction is important because different categories of government expenditure operate through different transmission mechanisms and may therefore exert different effects on economic growth. In this study, sectoral public expenditure comprises government expenditure on education, health, defence and public debt servicing. These components are examined in relation to economic growth in Sub-Saharan Africa.

The sectoral composition of expenditure is especially relevant in developing economies because fiscal resources are limited while developmental needs are extensive. According Ahuja and Pandit (2020), the composition of government expenditure matters considerably for economic performance, particularly because productive and non-productive expenditure components do not exert identical effects on output growth Governments must decide

how much of available revenue should be allocated to education, healthcare, security, debt obligations and other economic functions. These decisions create important opportunity costs. Increasing expenditure in one sector may restrict the resources available to another sector. Consequently, the overall growth effect of government expenditure may depend less on the total amount spent than on the efficiency and productivity of its sectoral allocation.

2.1.2 Education Expenditure and Economic Growth

Education expenditure represents an investment in human capital. Hanushek and Woessmann (2015) argue that the quality of human capital, particularly the cognitive skills acquired through education, constitutes an important determinant of long-run economic growth. Similarly, Psacharopoulos and Patrinos (2018) provide extensive empirical evidence showing that investment in education generates substantial private and social economic returns across countries. The effect may nevertheless be delayed. Educational expenditure requires time to influence enrolment, educational attainment, skills acquisition and eventual labour-market productivity. Furthermore, expenditure levels do not necessarily reflect educational quality. {Increased allocations may produce limited growth effects where resources are concentrated on recurrent expenditure or where institutional deficiencies weaken learning outcomes.

Ogundari and Awokuse (2018) show that human-capital dimensions make differing contributions to economic growth in SSA. The implication is that increasing education expenditure alone may not be sufficient. The quality and efficiency of spending and its capacity to produce economically relevant human capital are also important.

2.1.3 Health Expenditure and Economic Growth

Health constitutes another important component of human capital. A healthier population can participate more effectively in productive activities while reduced morbidity limits working days lost to illness. Improved health can also affect education outcomes and labour-force participation.

Bloom and Canning (2000) emphasise the relationship between population health and economic prosperity Sarpong et al (2018) similarly examine the health growth nevus in selected SSA counties and establish the economic relevance of health conditions. Raghupathi and Raghupathi (2020) provide additional evidence linking healthcare expenditure with economic performance.

The relationship between health expenditure and growth is nevertheless mediated by service quality and expenditure efficiency. Higher allocations may fail to generate corresponding improvements in health outcomes where health systems suffer from inadequate infrastructure, shortages of personnel of inefficient resource allocation.

2.1.4 Defence Expenditure and Economic Growth

Defence expenditure presents a more complex theoretical relationship with economic growth. Security is a fundamental public good and adequate security can encourage investment, protect productive assets and facilitate economic activity. Defence spending may therefore contribute indirectly to growth by maintaining political and economic stability.

At the same time, defence expenditure involves substantial opportunity costs. Resources devoted to military and security activities cannot simultaneously finance education, health of infrastructure. Whether defence spending promotes or constrains growth consequently depends on the security environment, expenditure efficiency and the extent to which defence allocations displace other productive expenditures.

Chowdhury (1991) demonstrates that the relationship between defence spending and economic growth is not necessarily uniform across countries. This reinforces the need to evaluate defence expenditure empirically rather than assume an inherently positive or negative growth effect.

2.1.5 Public Debt Servicing and Economic Growth

Public debt servicing represents government expenditure devoted to meeting interest and principal obligations arising from accumulated debt. Unlike expenditure on education or health, debt servicing does not necessarily provide a contemporaneous productive service. Its economic implications depend substantially on the purposes for which the original borrowing was undertaken and the sustainability of the resulting debt obligations.

Borrowing used to finance productive infrastructure may contribute to future growth while simultaneously generating repayment obligations. Excessive debt servicing, however, can reduce fiscal space and constrain

government capacity to finance productive and social expenditure. Akram (2017) demonstrates that the relationship between public debt and economic growth depends on debt dynamics and the capacity of an economy to manage its obligations.

For SSA countries operating under substantial development financing requirements, debt servicing is therefore an important component of expenditure analysis. Evaluating it alongside education, health and defence spending provides a broader picture of the fiscal allocation-growth relationship.

2.2 Theoretical Framework

The study is principally anchored on Keynesian theory. Keynes (1936) argues that government expenditure can influence aggregate economic activity through its effect on effective demand. When private demand is insufficient to maintain full employment and productive capacity, increased government expenditure can stimulate output through the fiscal multiplier.

A simplified Keynesian income identity may be represented as:

$Y = C + I + G + (X - M)$

where Y represents national output, C consumption, I investment, G government expenditure and $X - M$ net exports. An increase in government expenditure can therefore directly increase aggregate demand and indirectly generate additional income and consumption.

For the present study, the Keynesian framework is extended by recognising that different components of G may not exert identical effects on output. Education and health expenditure may operate principally through human-capital accumulation while defence expenditure can influence the security environment and debt servicing may affect fiscal space.

Wagner's law provides a complementary perspective Rather than viewing public expenditure primarily as a determinant of economic growth. Wagner proposes that government expenditure expands as economies develop. Economic development generates greater demand for public administration, education, social services and infrastructure. The expenditure-growth relationship may therefore operate in either direction.

Endogenous growth theory further supports the disaggregation of expenditure Lucas (1988) emphasises human capital as a source of sustained economic growth while productive government investment can generate externalities that affect private-sector productivity. These theoretical perspectives collectively suggest that the growth effect of government expenditure depends on both its composition and the time horizon considered.

2.3 Empirical Literature

A substantial empirical literature has investigated government expenditure and economic growth but findings remain mixed. Nurudeen and Usman (2010) examined disaggregated government expenditure in Nigeria and found that expenditure components produced differing growth outcomes. Oluwatobi and Ogunrinola (2011) focused on government expenditure on human capital development and its implications for Nigerian economic growth. Egbetunde and Fasanya (2013) also established the relevance of examining expenditure-growth relationships within a dynamic framework.

Evidence from SSA similarly provides no uniform conclusion. Kimaro et al. (2017) examined government expenditure, efficiency and economic growth among low-income SSA countries. Aboubacar and Xu (2017) investigated health expenditure and economic growth in SSA while Ogundari and Awokuse (2018) examined whether health contributes more strongly to growth than education. Sarpong et al. (2018) also analysed health and economic growth in selected SSA countries.

Kolapo et al. (2021) examined government expenditure and economic growth in SSA from the perspective of Wagner's law. More broadly, Ahuja and Pandit (2020) found that public expenditure can influence growth in developing economies although outcomes depend on the structure of spending and economic conditions.

Three issues emerge from this literature. First, aggregate government expenditure can obscure differences among individual spending categories. Second, studies focusing on individual countries may not adequately capture the broader experience of heterogeneous SSA economies. Third, distinguishing short-run effects from long-run relationships is important because human capital and other productive expenditures may require substantial time before their economic consequences become observable.

The present study addresses these issues by jointly examining education, health, defence and public debt-servicing expenditures within a panel ARDL framework covering 16 SSA countries over 2000-2023.

3. METHODOLOGY

3.1 Research Design and Scope

The study adopts an ex post facto quantitative research design based on panel data for 16 Sub-Saharan African countries covering the period 2000-2023. The use of panel data provides greater observational information than a single-country time series and permits the analysis to incorporate both temporal and cross-country variation.

Economic growth is represented by real gross domestic product (RGDP). The explanatory variables relevant to this article are government expenditure on education (GEXEDU), government expenditure on health (GEXHLT), government expenditure on defence (GEXDEF) and government expenditure on public debt servicing (GEXPDS). The general functional relationship is expressed as:

$$RGDP = f\,(GEXEDU,\ GEXHLT,\ GEXDEF,\ GEXPDS)$$

The econometric form can be represented as:

$$RGDP_{it} = \beta_0 + \beta_1 GEXEDU_{it} + \beta_2 GEXHLT, + \beta_3 GEXDEF_{it} + \beta_4 GEXPDS_{it} + \mathcal{E}_{it}$$

where i represents individual countries, t represents time, β_0 is the intercept, β_1, — β_4 are the parameters to be estimated and Ɛ represents the disturbance term.

3.2 Panel Unit Root Tests

The time-series properties of the variables were examined before model estimation to minimise the risk of spurious regression. Five complementary panel unit root procedures were employed: Levin-Lin-Chu (LLC), Breitung (BRG), Im-Pesaran-Shin (IPS), Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP).

Levin et al. (2002) provide a panel unit root procedure based on a common autoregressive parameter while the IPS approach allows greater heterogeneity across panel members. Employing multiple procedures provides a broader assessment of the stationarity properties of the series.

The results showed that the variables became stationary after first differencing. They were therefore treated as integrated of order one, $I(1)$. This result provided the statistical basis for proceeding to panel cointegration analysis.

3.3 Panel Cointegration Tests

Given the, $I(1)$ properties of the variables, panel cointegration analysis was conducted to determine whether sectoral government expenditure and economic growth share a stable long-run equilibrium relationship.

Pedroni (2004) and Kao (1999) residual-based cointegration procedures were employed. The null hypothesis is:

H_0 = No Cointegration

against the alternative:

H_1 = Cointegration exists

The significance of the relevant test statistics provided evidence that government expenditure and economic growth move together over the long run. Establishing cointegration is particularly important because it indicates that the observed relationship is not simply the consequence of common stochastic trends.

3.4 Panel ARDL Estimation

The Panel Autoregressive Distributed Lag framework was employed to estimate the short-run and long-run effects of the expenditure components on economic growth. The approach is suitable for dynamic panel relationships and permits explicit separation between temporary changes and equilibrium effects.

Following Pesaran et al. (1999), the error correction representation may be expressed generally as:

$$\Delta RGDP_{it} = \emptyset_i\left[RGDP_{i,t-1} - \theta_i' X_{it}\right] + \sum_{j=1}^{p-1} \lambda_{ij}\, \Delta RGDP_{i,t-j} + \sum_{j=0}^{q-1} \delta_{ij}'\, \Delta X_{i,t-j} + \varepsilon_{it}$$

where X contains GEXEDU, GEXHLT, GEXDEF and GEXPDS. The coefficient $\emptyset_i$ represents the error correction parameter.

A negative and statistically significant error correction coefficient indicates that departures from long-run equilibrium are corrected over time. The long-run coefficients identify the equilibrium effects of individual expenditure components while the differenced coefficients capture short-run adjustments.

4. RESULTS AND FINDINGS

4.1 Preliminary Results and Long-Run Relationship

The panel unit root tests established that the variables were stationary after first differencing. Evidence from the LLC, Breitung, IPS, ADF and PP procedures therefore supported their classification as $I(1)$ series. The stationarity results justified testing for cointegration rather than estimating an unrestricted relationship among potentially non-stationary variables.

The subsequent panel cointegration analysis provided evidence of a long-run relationship between sectoral government expenditure and economic growth. The significance of the common and individual autoregressive coefficient statistics indicated that the expenditure variables and RGDP do not evolve independently over time. Rather, deviations from their long-run relationship are subject to adjustment.

The existence of cointegration has an important economic interpretation. Although changes in public expenditure may generate different immediate effects, fiscal allocations and economic performance remain systematically related over the longer horizon. This provides justification for separating the short-run and long-run estimates rather than drawing conclusions from a single static coefficient.

4.2 Education Expenditure and Economic Growth

Government expenditure on education exhibits a positive but statistically insignificant relationship with economic growth in both the short run and long run. The positive sign conforms to the theoretical expectation that investment in education can improve human capital and productive capacity. The absence of statistical significance, however, indicates that variations in education expenditure were not sufficiently associated with changes in economic growth to establish a robust effect across the sampled SSA countries.

This result deserves careful interpretation. It does not establish that education is unimportant for economic development. Rather, it suggests that education expenditure itself is not synonymous with effective human-capital formation. The economic return to educational spending depends on how resources are allocated and whether expenditure produces improvements in access, completion, educational quality and labour-market-relevant skills. The finding may also reflect the long gestation period associated with educational investment. Government expenditure on primary, secondary or tertiary education does not immediately translate into additional productive output. Students require time to complete their education and enter productive employment. Moreover, where expenditure is insufficient relative to enrolment growth, infrastructure requirements and staffing needs, nominal increases may not produce corresponding improvements in educational outcomes.

The result is consistent with the broader argument of Ogundari and Awokuse (2018) that the different dimensions of human capital do not contribute uniformly to economic growth in SSA. It also suggests that the policy emphasis should extend beyond increasing education budgets towards improving the efficiency and developmental relevance of educational expenditure.

4.3 Health Expenditure and Economic Growth

Government expenditure on health exhibits different effects across the short run and long run. The estimated relationship is negative in the short run but becomes positive over the long run. This change in sign is consistent with the nature of health investment because expenditure may initially represent a fiscal cost while its economic benefits emerge gradually through improvements in population health and labour productivity.

Health expenditure can contribute to economic performance by reducing morbidity, increasing labour-force participation and improving the productive capacity of workers. Better health outcomes can also complement education because healthier individuals are better able to acquire and utilise human capital. Bloom and Canning (2000) emphasise the connection between population health and economic prosperity while Sarpong et al. (2018) provide evidence of a health-growth relationship in selected SSA countries.

The short-run negative outcome may reflect adjustment costs and the immediate budgetary burden of health programmes. Public resources allocated to hospitals, personnel, medical equipment and disease-control programmes require expenditure before their productivity effects become observable. The long-run positive relationship therefore provides a more appropriate perspective for evaluating health expenditure as an investment in productive human capacity.

Nevertheless, the effectiveness of health expenditure remains dependent on the quality of health service delivery. Increased spending cannot be expected to generate sustained growth where resources fail to translate into improved healthcare access and outcomes. The result consequently supports a long-term approach to health investment accompanied by improvements in expenditure efficiency.

4.4 Defence Expenditure and Economic Growth

The estimates indicate that government expenditure on defence has a statistically significant relationship with economic growth across the short-run and long-run dimensions examined in the study. The result confirms that defence expenditure constitutes an economically consequential component of government spending in SSA.

The relationship between defence expenditure and economic growth is inherently complex. Security is necessary for investment, production and the protection of economic assets. Persistent insecurity increases uncertainty, disrupts productive activity and can discourage both domestic and foreign investment. To this extent, appropriately directed defence expenditure may support economic performance by improving the security environment.

At the same time, defence spending has an opportunity cost. Resources allocated to defence cannot simultaneously finance education, healthcare or productive infrastructure. Consequently, the growth implications of defence expenditure depend on whether allocations correspond to legitimate security needs and whether resources are efficiently managed.

The findings therefore should not be interpreted as an argument for unrestricted expansion of defence budgets. Rather, they demonstrate that security expenditure is sufficiently important to influence economic performance and should consequently be subjected to the same considerations of efficiency, accountability and fiscal sustainability that apply to other expenditure categories.

4.5 Public Debt Servicing and Economic Growth

Public debt servicing represents a distinct component of government expenditure because it arises from previous borrowing rather than the contemporaneous provision of public goods and services. Its inclusion provides insight into the extent to which fiscal obligations can affect the resources available for economic development.

Debt can contribute positively to economic performance where borrowed resources finance productive infrastructure, human-capital development or other investments capable of generating future economic returns. The associated servicing obligations nevertheless impose claims on subsequent government revenue. Where these obligations become substantial, they can reduce fiscal space and constrain expenditure on productive sectors.

For SSA economies, this issue is particularly important because governments must simultaneously finance development needs and meet domestic and external debt obligations. The relevant policy concern is therefore not simply whether governments borrow but whether borrowed resources generate economic returns sufficient to justify future repayment requirements.

The results from the study reinforce the need to consider debt servicing within the broader composition of public expenditure. Rising debt-service obligations can change the effective allocation of government resources even where nominal budgets for education, health and other sectors increase. Fiscal sustainability consequently remains integral to the relationship between public expenditure and economic growth.

4.6 Error Correction and Adjustment towards Equilibrium

The estimated error correction term is negative and statistically significant. This result confirms the existence of an adjustment mechanism through which short-run deviations from the equilibrium relationship between sectoral public expenditure and economic growth are gradually corrected.

The significance of the error correction term reinforces the panel cointegration findings. It indicates that shocks affecting expenditure or economic growth do not permanently separate the variables from their long-run relationship. Instead, part of the disequilibrium is corrected in subsequent periods.

This distinction between short-run and long-run effects is particularly relevant to fiscal policy. An expenditure category that produces limited or adverse immediate effects may nevertheless contribute positively over a longer horizon. Conversely, expenditure that stimulates short-term activity may not necessarily generate sustainable long-run growth. Policy evaluation should therefore avoid assessing the effectiveness of sectoral expenditure exclusively on the basis of immediate output responses.

4.7 findings

The findings demonstrate that the relationship between public expenditure and economic growth in SSA is **composition-dependent and time-sensitive**. The expenditure components do not produce identical effects and short-run results do not invariably predict their long-run consequences.

Education expenditure remains positively related to economic growth but its effect is statistically insignificant. This raises concerns about the extent to which education budgets across the sampled countries are being transformed into productive human capital. Health expenditure resents a more favourable long-run outcome than its short-run relationship, which is consistent with the delayed productivity effects associated with improved health. Defence expenditure also has measurable economic implications while public debt servicing highlights the fiscal constraints created by accumulated borrowing.

These results support the decision to disaggregate public expenditure. An aggregate expenditure coefficient would conceal these sector-specific differences and could consequently produce misleading policy conclusions. The findings also qualify a simple Keynesian interpretation according to which increasing government expenditure necessarily increases output. The economic consequences depend substantially on where expenditure is directed and how long its effects require to materialise.

The results are broadly consistent with Nurudeen and Usman (2010), who demonstrate that different categories of government expenditure produce differing growth outcomes. They also correspond with Kimaro et al. (2017), whose analysis emphasises expenditure efficiency in SSA and Ogundari and Awokuse (2018), who establish differences between human-capital dimensions.

The evidence therefore shifts the fiscal-policy discussion from how much governments spend towards what governments spend on and what economic outcomes those expenditures generate. This distinction is particularly important in fiscally constrained SSA economies where increasing expenditure in one area frequently requires either reducing expenditure elsewhere, increasing taxation or assuming additional debt.

5. CONCLUSION AND POLICY IMPLICATIONS

This study examined the short-run and long-run effects of sectoral public expenditure on economic growth in 16 Sub-Saharan African countries over the period 2000-2023. Government expenditure was disaggregated into education, health, defence and public debt servicing to determine whether individual expenditure categories exert different effects on economic performance. Panel unit root tests, panel cointegration procedures and the Panel ARDL framework were employed to distinguish temporary fiscal effects from long-run relationships.

The empirical evidence establishes a long-run relationship between public sector expenditure and economic growth. More importantly, the findings demonstrate considerable variation across expenditure categories. Education expenditure exhibits a positive but statistically insignificant effect in both the short run and long run. The result suggests that increases in educational expenditure have not translated sufficiently into measurable economic growth across the sampled countries. This does not diminish the importance of education but raises questions concerning expenditure adequacy, efficiency and the quality of educational outcomes.

Health expenditure produces different short-run and long-run effects, with the relationship becoming positive over the longer horizon. This pattern is consistent with the delayed nature of health investment because improvements in population health require time to affect labour productivity and economic performance. Fiscal evaluation of healthcare spending should therefore incorporate longer-term outcomes rather than relying solely on immediate growth responses.

Defence expenditure is also economically consequential. Given the importance of security to investment and production, adequate defence provision remains necessary. However, increased defence allocations should be based on demonstrable security requirements and subjected to rigorous expenditure management because excessive allocations can displace productive social and economic spending.

Public debt servicing requires particularly careful fiscal management. Borrowing can support development when resources finance productive investments but servicing obligations reduce future fiscal space. Governments should therefore ensure that debt-financed expenditure generates sufficient economic and social returns while maintaining debt obligations at sustainable levels.

The findings have broader implications for fiscal policy in SSA. Governments should move away from evaluating fiscal performance primarily through the size of annual expenditure allocations. Greater emphasis should be placed on expenditure composition, efficiency and measurable outcomes. Education spending should focus on improvements in educational quality, skills acquisition and workforce productivity. Health expenditure should prioritise effective service delivery and measurable health outcomes. Defence allocations should balance security requirements against competing development needs while debt management should protect fiscal space for productive expenditure.

REFERENCES

1. *Aboubacar, B. and Xu, D. (2017). The impact of health expenditure on the economic growth in Sub-Saharan Africa. Theoretical Economics Letters, 7(3), 615-622.*
2. *Ahuja, D. and Pandit, D. (2020). Public expenditure and economic growth: Evidence from the developing countries. FIIB Business Review, 9(2).*
3. *Akram, N. (2017). Role of public debt in economic growth of Sri Lanka: An ARDL approach. Pakistan Journal of Applied Economics, 27(2), 189-212.*
4. *Becker, G. S. (1964). Human capital: A theoretical and empirical analysis with special reference to education. Columbia University Press.*
5. *Bloom, D. and Canning, D. (2000). The health and wealth of nations. Science, 287, 1207-1209.*
6. *Chowdhury, A. R. (1991). A causal analysis of defence spending and economic growth. Journal of Conflict Resolution, 35(1), 80-97.*
7. *Egbetunde, T. and Fasanya, I. O. (2013). Public expenditure and economic growth in Nigeria: Evidence from auto-regressive distributed lag specification. Zagreb International Review of Economics and Business, 16(1), 79-92.*
8. *Hanushek, E. A., & Woessmann, L. (2015). The knowledge capital of nations: Education and the economics of growth. MIT Press. https://doi.org/10.7551/mitpress/9780262029179.001.0001*
9. *Keynes, J. M. (1936). The general theory of employment, interest and money. Macmillan.*
10. *Kimaro, E. L., Keong, C. C. and Sea, L. L. (2017). Government expenditure, efficiency and economic growth: A panel analysis of Sub-Saharan African low-income countries. African Journal of Economic Review, 5(2), 34-54.*
11. *Kolapo, F., Azeez, B., Mokuolu, J., Oluwaleye, T. and Alabi, K. (2021). Impact of government expenditure on economic growth in Sub-Saharan Africa: A validity of Wagner's law. International Journal of Scientific Research and Management, 9(2), 2092-2150.*
12. *Levin, A., Lin, C. F. and Chu, C. S. J. (2002). Unit root tests in panel data: Asymptotic and finite-sample properties. Journal of Econometrics, 108(1), 1-24.*
13. *Lucas, R. E. (1988). On the mechanics of economic development. Journal of Monetary Economics, 22(1), 3-42.*
14. *Nurudeen, A. and Usman, A. (2010). Government expenditure and economic growth in Nigeria: A disaggregated analysis. Business and Economics Journal, 4(4), 1-11.*
15. *Ogundari, K. and Awokuse, T. O. (2018). Human capital contribution to economic growth in Sub-Saharan Africa: Does health status matter more than education? Economic Analysis and Policy, 58, 131-140.*
16. *Oluwatobi, S. O. and Ogunrinola, I. O. (2011). Government expenditure on human capital development: Implications for economic growth in Nigeria. Journal of Sustainable Development, 4(3).*
17. *Pedroni, P. (2004). Panel cointegration: Asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. Econometric Theory, 20(3), 597-625.*
18. *Pesaran, M. H., Shin, Y. and Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. Journal of the American Statistical Association, 94(446), 621-634.*
19. *Raghupathi, V. and Raghupathi, W. (2020). Healthcare expenditure and economic performance: Insights from the United States data. Frontiers in Public Health, 8, 156.*
20. *Psacharopoulos, G., and Patrinos, H. A. (2018). Returns to investment in education: A decennial review of the global literature. Education Economics, 26(5), 445-458. https://doi.org/10.1080/09645292.2018.1484426*
21. *Samuelson, P. A. (1954). The pure theory of public expenditure. The Review of Economics and Statistics, 36(4), 387-389.*
22. *Sarpong, B., Nketiah-Amponsah, E. and Owoo, N. S. (2018). Health and economic growth nexus: Evidence from selected Sub-Saharan African countries. Global Business Review, 21(2).*