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PUBLIC DEBT SUSTAINABILITY AND ECONOMIC GROWTH IN SUB-SAHARAN AFRICA: THE MODERATING ROLE OF FISCAL GOVERNANCE AND INSTITUTIONAL QUALITY

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ABSTRACT

Public debt sustainability has become a critical economic challenge for Sub-Saharan African economies due to increasing borrowing requirements, rising debt-servicing obligations, and limited fiscal space for development investment. This study examined the effect of public debt sustainability on economic growth in Sub-Saharan Africa, focusing on the moderating roles of fiscal governance and institutional quality. The study was anchored in Debt Overhang Theory, Fiscal Sustainability Theory, and Institutional Theory. An explanatory research design and quantitative approach were adopted using secondary panel data from 20 Sub-Saharan African economies covering 2010–2025, resulting in 320 country-year observations. Data were obtained from the World Bank Development Indicators, International Monetary Fund databases, African Development Bank reports, and Worldwide Governance Indicators. Descriptive statistics, correlation analysis, and fixed-effects panel regression with interaction terms were employed. The results showed that public debt sustainability had a negative and statistically significant effect on economic growth ($\beta = -0.041$, $p = 0.001$). External borrowing ($\beta = -0.028$, $p = 0.011$) and debt-servicing costs ($\beta = -0.036$, $p = 0.011$) also had significant negative effects on economic growth. Foreign direct investment positively influenced growth ($\beta = 0.214$, $p = 0.010$), while inflation had a significant negative effect ($\beta = -0.067$, $p = 0.002$). The baseline model explained 46.2% of the variation in economic growth. Fiscal governance significantly reduced the adverse effect of public debt on growth ($\beta = 0.019$, $p = 0.018$), while institutional quality produced a stronger positive moderating effect ($\beta = 0.024$, $p = 0.008$). The moderated model explained 53.8% of the variation in economic growth. The study concludes that the economic consequences of public debt depend on borrowing levels, debt-servicing pressures, governance effectiveness, institutional strength, and the productive allocation of borrowed resources. It recommends strengthening debt-management frameworks, fiscal transparency, institutional accountability, domestic revenue mobilization, and the allocation of borrowed funds to productive investments.

KEYWORDS: Public debt sustainability, economic growth, external borrowing, debt-servicing costs, fiscal governance, institutional quality, Sub-Saharan Africa.

1.0 INTRODUCTION

1.1 Background to the Study

Public debt remains a significant concern in global financial sustainability discussions as governments continue to utilize borrowing to finance development activities, address economic shocks, and support fiscal operations. Global public debt has increased substantially, reaching approximately USD 97 trillion in 2023, equivalent to about 93% of global gross domestic product, driven largely by pandemic-related spending and rising development financing requirements (International Monetary Fund [IMF], 2023). While public borrowing can stimulate economic growth when allocated toward productive investments, excessive debt accumulation creates financial vulnerabilities through increased repayment obligations, reduced fiscal flexibility, and weakened investor confidence (Reinhart & Rogoff, 2010; Panizza & Presbitero, 2014). Empirical evidence has demonstrated that the relationship between public debt and economic growth is nonlinear, where moderate borrowing may support development while excessive debt constrains economic performance (Eberhardt & Presbitero, 2015; Chudik et al., 2017).

Emerging economies have experienced increasing debt pressures as governments have expanded borrowing to finance recovery programs, infrastructure projects, and social interventions following the COVID-19 pandemic. The IMF (2024) reported that debt levels among emerging markets have remained elevated due to persistent fiscal deficits, higher borrowing costs, and tighter global financial conditions. Rising interest rates in international markets have intensified debt servicing challenges, particularly among countries that depend heavily on external financing denominated in foreign currencies (World Bank, 2023). Previous studies have established that excessive public debt may negatively influence economic growth by crowding out private investment, increasing domestic interest rates, and diverting government resources from productive expenditure toward debt repayment (Égert, 2015; Reinhart et al., 2012; Woo & Kumar, 2015). Consequently, debt sustainability has become a critical component of economic and financial management in emerging economies.

Sub-Saharan Africa has experienced substantial increases in public debt levels, making debt sustainability one of the most pressing economic challenges in the region. The African Development Bank (2023) reported that African economies have faced increasing fiscal pressures due to pandemic recovery requirements, exchange rate depreciation, commodity price volatility, and rising global financing costs. Several countries have experienced increasing debt servicing burdens, limiting their capacity to allocate resources toward development priorities such as infrastructure, healthcare, and education (IMF, 2023). Research has shown that the impact of public debt in African economies depends not only on debt magnitude but also on institutional effectiveness, governance quality, and the productivity of borrowed resources (Fosu, 2018; Essl et al., 2019). Furthermore, weak governance systems may reduce the efficiency of public expenditure, limiting the ability of debt-financed investments to generate sustainable economic growth (Law et al., 2023).

Kenya provides an important empirical context for understanding public debt sustainability within Sub-Saharan Africa because the country has experienced significant increases in public borrowing over the past decade. Public debt has expanded due to infrastructure development initiatives, budgetary financing requirements, and economic recovery measures, with debt levels rising from approximately 62% of GDP in 2019 to above 70% in subsequent years (Central Bank of Kenya [CBK], 2024; IMF, 2024). Although borrowing has supported infrastructure expansion and public investment, increasing debt service obligations have placed pressure on government revenues and fiscal capacity (World Bank, 2023). Previous research has indicated that the economic contribution of public debt depends on whether borrowed funds are directed toward productive investments and managed within effective institutional frameworks (Were, 2015; Ndung'u & Signé, 2020; Kose et al., 2020). Therefore, Kenya represents a relevant case for examining broader debt sustainability challenges affecting African economies.

Despite extensive scholarly attention on the relationship between public debt and economic growth, important gaps remain regarding the mechanisms through which governance structures influence debt outcomes in Sub-Saharan Africa. Existing studies have largely focused on the direct relationship between debt accumulation and economic performance, while limited attention has been given to the moderating role of fiscal governance and institutional quality in determining whether debt contributes positively or negatively to economic growth (Panizza & Presbitero, 2014; Chudik et al., 2017). Furthermore, evidence remains limited on how debt servicing costs, external borrowing, and institutional conditions jointly influence investment capacity and economic development in African economies (Kose et al., 2020; Law et al., 2023). This study therefore examined public debt sustainability and economic growth in Sub-Saharan Africa by incorporating fiscal governance and institutional quality as moderating factors. The findings contribute empirical evidence to debates on sustainable public finance management and economic development in emerging economies.

1.2 Statement of the Problem

Public debt sustainability has emerged as a major financial challenge for Sub-Saharan African economies as governments continue to increase borrowing to finance development needs, fiscal deficits, and post-pandemic economic recovery programs. Although public debt can promote economic growth when invested in productive sectors, excessive debt accumulation creates significant financial risks through increased debt servicing obligations, reduced fiscal space, and constrained private sector investment. Global public debt exceeded USD 97 trillion in 2023, while many developing economies experienced substantial increases in debt vulnerabilities due to higher borrowing requirements and rising global interest rates (International Monetary Fund [IMF], 2023). In Sub-Saharan Africa, average public debt levels increased significantly after the COVID-19 pandemic, with several countries recording debt-to-GDP ratios exceeding sustainable thresholds, thereby increasing concerns regarding fiscal stability and long-term economic growth (African Development Bank [AfDB], 2023; World Bank, 2023). The IMF (2024) further reported that debt servicing costs have become one of the fastest-growing fiscal pressures in many African economies, limiting governments' ability to allocate resources toward productive investments. Despite the importance of public borrowing in financing economic development, empirical evidence regarding the relationship between debt dynamics and economic growth remains inconclusive. Previous studies have demonstrated that moderate levels of debt may enhance economic performance by financing infrastructure, human capital development, and productive investment, while excessive debt accumulation may generate debt overhang effects that discourage investment and reduce economic growth (Reinhart et al., 2012; Eberhardt & Presbitero, 2015). However, much of the existing literature has focused on the direct effect of debt on growth, with limited attention given to how institutional quality and fiscal governance influence this relationship, particularly in African economies (Panizza & Presbitero, 2014; Kose et al., 2020). This limitation is significant because countries with stronger governance structures may utilize borrowed resources more efficiently, whereas weak institutional environments may contribute to inefficient expenditure, corruption risks, and limited economic returns from debt-financed projects (Fosu, 2018; Law et al., 2023). Kenya provides an important context for investigating this challenge because public debt increased from approximately 62% of GDP in 2019 to above 70% in subsequent years, while debt servicing requirements have placed increasing pressure on public finances (Central Bank of Kenya [CBK], 2024; IMF, 2024). However, limited empirical evidence exists on how debt composition, debt servicing costs, and governance conditions jointly influence economic growth across Sub-Saharan Africa. Therefore, this study addressed this gap by examining the effect of public debt sustainability on economic growth while incorporating fiscal governance and institutional quality as moderating factors using secondary panel data from Sub-Saharan African economies.

1.3 Research Objectives

1.3.1 General Objective

To examine the effect of public debt sustainability on economic growth in Sub-Saharan Africa, with particular focus on the moderating role of fiscal governance and institutional quality.

1.3.2 Specific Objectives

The study was guided by the following specific objectives:

1. To examine the effect of public debt levels on economic growth in Sub-Saharan African economies.
2. To determine the effect of external borrowing and debt servicing costs on economic growth in Sub-Saharan Africa.
3. To assess the moderating effect of fiscal governance on the relationship between public debt sustainability and economic growth in Sub-Saharan Africa.
4. To examine the moderating effect of institutional quality on the relationship between public debt sustainability and economic growth in Sub-Saharan Africa.

1.4 Research Hypotheses

The study tested the following null hypotheses:

$H0_1$: Public debt levels have no significant effect on economic growth in Sub-Saharan Africa.

$H0_2$: External borrowing and debt servicing costs have no significant effect on economic growth in Sub-Saharan Africa.

$H0_3$: Fiscal governance does not significantly moderate the relationship between public debt sustainability and economic growth in Sub-Saharan Africa.

$H0_4$: Institutional quality does not significantly moderate the relationship between public debt sustainability and economic growth in Sub-Saharan Africa.

1.5 Significance of the Study

This study is significant to academics, policymakers, government institutions, financial institutions, investors, and development partners by providing empirical evidence on the relationship between public debt sustainability and economic growth in Sub-Saharan Africa. For academics and researchers, the study contributes to the existing body of knowledge in public finance, development finance, and economic sustainability by extending the understanding of how debt dynamics influence economic outcomes under different institutional and governance conditions. Unlike studies that examine only the direct relationship between public debt and economic growth, this study incorporates fiscal governance and institutional quality as moderating factors, providing deeper insights into the mechanisms through which debt affects economic performance.

For policymakers and government institutions, the findings provide valuable guidance on sustainable debt management strategies, fiscal planning, and the development of effective governance frameworks. Governments across Sub-Saharan Africa can utilize the findings to improve borrowing decisions, strengthen public financial management systems, and ensure that borrowed funds are directed toward productive investments that support long-term economic growth. The findings are particularly relevant as African economies continue to experience rising debt obligations and increasing pressure to balance development financing needs with fiscal sustainability.

Financial institutions and development organizations may benefit from the study by gaining a better understanding of how public debt conditions, governance structures, and macroeconomic stability influence financial environments within African economies. This knowledge can support improved assessment of sovereign risk, investment conditions, and financial stability considerations. Furthermore, investors may use the findings to evaluate how debt sustainability and institutional quality influence economic performance and market confidence when making investment decisions in emerging African markets. Overall, the study provides important insights into strategies for achieving responsible borrowing, stronger financial governance, and sustainable economic growth in Sub-Saharan Africa.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

This section presents the theoretical foundations explaining the relationship between public debt sustainability, institutional conditions, and economic growth in Sub-Saharan Africa. The study is anchored on three complementary theories: Debt Overhang Theory, Fiscal Sustainability Theory, and Institutional Theory. These theories explain how excessive borrowing affects economic performance, how governments maintain sustainable debt levels, and why institutional quality determines the effectiveness of public debt management.

2.1.1 Debt Overhang Theory

Debt Overhang Theory provides a fundamental explanation of how excessive public debt accumulation can constrain economic growth. The theory, initially developed by Krugman (1988) and Sachs (1989), argues that when a country's debt obligations become excessively high, investors anticipate that future economic returns will be used primarily to repay creditors rather than support productive investment. Consequently, high debt levels reduce incentives for domestic and foreign investment, resulting in slower capital accumulation and reduced economic growth. The theory suggests that debt can support economic development when maintained at manageable levels; however, beyond a certain threshold, additional borrowing generates diminishing economic benefits and creates a burden on future generations.

The application of Debt Overhang Theory to public finance highlights the importance of distinguishing between productive and unproductive borrowing. Public debt used to finance infrastructure, technology, education, and productive capacity may generate economic returns that exceed borrowing costs. However, debt accumulated to finance recurrent expenditure, budget deficits, or inefficient projects may create financial pressures without generating sufficient economic benefits (Reinhart et al., 2012). Empirical studies have supported the argument that excessive debt accumulation negatively affects economic growth through reduced investment, increased uncertainty, and constrained fiscal policy space (Eberhardt & Presbitero, 2015; Chudik et al., 2017).

In the context of Sub-Saharan Africa, Debt Overhang Theory is particularly relevant because many countries have experienced rapid increases in public borrowing while facing limited revenue mobilization capacity and significant development financing needs. High external debt levels expose African economies to exchange rate risks and rising international borrowing costs, which may increase debt servicing pressures and reduce resources available for economic development (Essl et al., 2019). The theory therefore provides a foundation for examining whether increasing public debt levels and debt servicing obligations negatively influence economic growth in African economies.

For this study, Debt Overhang Theory supports the examination of public debt levels, external borrowing, and debt servicing costs as independent variables influencing economic growth. It provides the theoretical explanation that excessive debt accumulation may weaken economic performance unless supported by effective debt management practices and productive investment strategies.

2.1.2 Fiscal Sustainability Theory

Fiscal Sustainability Theory explains the ability of governments to maintain public debt obligations without creating long-term economic instability. The theory is based on the principle that government borrowing remains sustainable when future fiscal revenues are sufficient to meet debt repayment obligations without requiring excessive taxation, inflationary financing, or reductions in essential public expenditure (Bohn, 1998). Fiscal sustainability therefore requires governments to maintain a balance between borrowing needs, economic growth capacity, revenue generation, and expenditure management.

The theory emphasizes that public debt itself is not necessarily harmful; rather, the sustainability of debt depends on the relationship between economic growth, interest rates, and fiscal balances. When economic growth exceeds borrowing costs, governments may maintain debt sustainability because increased economic activity expands revenue capacity. However, when debt accumulation exceeds the economy's ability to generate resources, debt burdens may become unsustainable and negatively affect financial stability (Wyplosz, 2011). This perspective is particularly important for emerging economies where borrowing is often necessary for development but may create vulnerabilities if not managed effectively.

Fiscal Sustainability Theory is relevant to Sub-Saharan African economies because many governments face persistent fiscal deficits, limited domestic revenue bases, and increasing debt servicing requirements. According to the IMF (2024), rising interest payments have reduced fiscal flexibility in several African countries, limiting government capacity to invest in growth-enhancing sectors. Effective fiscal governance, including transparent budgeting, responsible borrowing practices, and efficient public expenditure management, therefore becomes essential for maintaining sustainable debt levels.

In this study, Fiscal Sustainability Theory provides the foundation for examining how debt sustainability affects economic growth and why fiscal governance may moderate this relationship. The theory supports the argument that strong fiscal institutions improve debt management effectiveness and increase the likelihood that borrowing contributes positively to economic development.

2.1.3 Institutional Theory

Institutional Theory explains how the quality of governance structures influences economic outcomes by shaping incentives, decision-making processes, and resource allocation mechanisms. North (1990) argued that institutions, including formal rules, regulations, and governance systems, determine the efficiency of economic activities by reducing uncertainty and improving accountability. In the context of public debt management, institutional quality influences how governments borrow, allocate, and monitor financial resources.

Strong institutions enhance the effectiveness of public borrowing by promoting transparency, accountability, fiscal discipline, and efficient investment decisions. Conversely, weak institutions may encourage excessive borrowing, misallocation of public funds, and inefficient debt utilization, thereby reducing the contribution of debt to economic growth (Acemoglu & Robinson, 2012). Therefore, institutional quality represents an important factor determining whether public debt becomes a driver of development or a source of economic vulnerability.

The relevance of Institutional Theory in Sub-Saharan Africa is significant because differences in governance quality contribute to variations in economic outcomes among countries with similar debt levels. Countries with stronger institutions may transform borrowed resources into productive investments, while countries with weaker governance structures may experience limited economic returns from debt accumulation (Fosu, 2018; Law et al., 2023).

For this study, Institutional Theory supports the inclusion of institutional quality as a moderating variable in the relationship between public debt sustainability and economic growth. It explains why governance conditions influence the effectiveness of debt management and why improvements in institutional capacity may enhance the positive contribution of public borrowing to economic development.

2.2 Empirical Literature Review

Empirical research on public debt and economic growth has generated considerable debate regarding whether government borrowing promotes economic development or creates long-term financial vulnerabilities. Existing studies have produced mixed findings, with some researchers arguing that debt-financed investment enhances economic growth, while others demonstrate that excessive debt accumulation reduces economic performance through debt overhang, fiscal constraints, and reduced investment incentives. The variation in findings suggests that the economic consequences of public debt depend on factors such as debt composition, borrowing purpose, institutional capacity, and fiscal management practices. This section reviews empirical studies related to public debt, external borrowing, debt servicing costs, fiscal governance, institutional quality, and economic growth, with emphasis on evidence from emerging and African economies.

2.2.1 Public Debt and Economic Growth

The relationship between public debt and economic growth has received extensive empirical attention globally, although findings remain inconclusive. Early empirical studies suggested that public debt could support economic growth by enabling governments to finance infrastructure, education, and productive investments that enhance economic capacity. Reinhart and Rogoff (2010), using historical data from advanced and emerging economies, found that high levels of public debt were associated with weaker economic growth, particularly when debt exceeded critical thresholds. However, their findings generated considerable debate regarding the existence and magnitude of debt thresholds. Reinhart et al. (2012) further demonstrated that prolonged periods of high public debt were associated with lower economic growth, arguing that excessive debt accumulation reduces economic flexibility and increases vulnerability to financial shocks.

Subsequent studies have provided additional evidence regarding the nonlinear relationship between debt and economic performance. Eberhardt and Presbitero (2015), using a large panel dataset covering 118 countries, found that the relationship between public debt and economic growth varied significantly across countries, suggesting that country-specific factors influence debt outcomes. Similarly, Chudik et al. (2017) analyzed debt-growth relationships across advanced and developing economies and found that persistent increases in debt levels were associated with declining growth performance. These findings support the argument that while moderate borrowing may facilitate economic development, excessive debt accumulation can negatively affect growth through reduced investment, increased uncertainty, and limited fiscal space.

Evidence from developing economies has highlighted additional challenges associated with public debt accumulation. Panizza and Presbitero (2014) examined the relationship between government debt and economic growth and found that high debt levels were associated with weaker economic performance, although the authors emphasized that causality between debt and growth remains complex. Similarly, Kose et al. (2020) found that debt accumulation in emerging markets increased vulnerability to economic shocks, particularly where institutional frameworks and fiscal management systems were weak. These findings suggest that the effect of debt on growth depends not only on the amount of borrowing but also on the ability of governments to manage debt effectively.

Within Sub-Saharan Africa, empirical evidence demonstrates increasing concerns regarding the sustainability of public debt and its implications for economic growth. Fosu (2018) examined African economies and found that high debt levels negatively influenced economic performance by limiting investment capacity and reducing fiscal flexibility. The study emphasized that debt accumulation in African countries often occurs within contexts characterized by limited domestic revenue generation and dependence on external financing. Essl et al. (2019) similarly observed that rising debt vulnerabilities in African economies were associated with increased exposure to external shocks, exchange rate fluctuations, and higher debt servicing requirements. These challenges have become more pronounced following the COVID-19 pandemic, as many African governments increased borrowing to support economic recovery programs.

In Kenya, public debt has become a major policy concern due to increased borrowing for infrastructure development, budget financing, and economic recovery initiatives. Previous studies have indicated that public debt can contribute positively to economic development when resources are allocated toward productive investments; however, excessive borrowing may constrain growth through increased repayment obligations and reduced private sector financing capacity (Were, 2015). The Central Bank of Kenya (2024) reported that Kenya's public debt levels increased substantially over the past decade, creating pressure on government revenues due to rising debt servicing costs. Despite extensive discussion on Kenya's debt situation, limited empirical studies have examined the combined influence of debt levels, debt servicing obligations, and institutional conditions on economic growth within a broader Sub-Saharan African framework.

Therefore, existing empirical literature reveals three important gaps. First, previous studies have produced inconsistent findings regarding the direction and magnitude of the debt-growth relationship. Second, many studies have focused on the direct effect of debt while giving limited attention to governance conditions that determine debt effectiveness. Third, limited evidence exists on how fiscal governance and institutional quality moderate the relationship between public debt sustainability and economic growth in Sub-Saharan Africa. This study addresses these gaps by examining public debt sustainability within a broader framework that incorporates debt dynamics, governance factors, and institutional conditions using panel data from Sub-Saharan African economies.

2.2.2 External Borrowing and Debt Servicing Costs on Economic Growth

External borrowing remains an important source of development financing for emerging economies, particularly those with limited domestic revenue capacity and substantial infrastructure investment requirements. However, dependence on foreign borrowing exposes countries to additional financial risks associated with exchange rate fluctuations, external interest rate movements, and refinancing pressures. Empirical evidence has shown that the composition and cost of public debt significantly influence whether borrowing contributes positively to economic growth. Presbitero (2012) examined debt accumulation in low-income countries and found that external debt burdens negatively affected economic performance when borrowing exceeded countries' repayment capacity. The study emphasized that external debt sustainability depends on economic growth, export capacity, and the effective management of borrowed resources. Similarly, Pattillo et al. (2011) demonstrated that high external debt levels reduced economic growth by limiting investment opportunities and increasing macroeconomic vulnerabilities.

The cost of servicing external debt has become an increasing concern for developing economies because rising interest payments reduce government resources available for productive expenditure. According to Abbas et al. (2014), debt servicing obligations can create significant fiscal pressures by diverting public funds away from infrastructure, education, healthcare, and other growth-enhancing sectors. Their study found that countries experiencing high debt repayment obligations often recorded weaker economic outcomes due to reduced public investment capacity. In addition, Woo and Kumar (2015) established that increasing debt burdens affected economic performance through reduced capital accumulation and slower productivity growth. These findings suggest that the economic consequences of borrowing are determined not only by debt volumes but also by the financial costs associated with maintaining debt obligations.

In African economies, external borrowing has historically played a major role in financing development projects due to limited domestic savings and investment capacity. However, increased reliance on external creditors has exposed many countries to currency and refinancing risks. According to Mustapha and Prizzon (2015), African countries experienced increasing debt vulnerabilities due to greater reliance on non-concessional external borrowing, particularly commercial loans with higher interest rates and shorter repayment periods. The study highlighted that changes in global financial conditions significantly influence debt sustainability in African economies. Similarly, Ndikumana and Boyce (2018) found that external debt accumulation in African countries was associated with significant capital outflows, reducing the availability of domestic resources for investment and economic development.

Kenya's experience reflects broader African challenges associated with external borrowing and debt servicing pressures. External loans have supported major infrastructure projects, including transport and energy development, but increasing repayment obligations have raised concerns regarding fiscal sustainability. The National Treasury of Kenya (2024) reported that debt servicing represented a significant proportion of government expenditure, reducing fiscal space for development priorities. Although external borrowing can enhance economic capacity when allocated effectively, excessive reliance on foreign financing may increase vulnerability to exchange rate depreciation and international interest rate changes. Therefore, examining the effect of external borrowing and debt servicing costs on economic growth remains essential for understanding the sustainability of public finance management in Sub-Saharan Africa.

Despite existing research on external debt, important gaps remain. Previous studies have primarily examined external borrowing as part of overall debt accumulation, providing limited attention to the distinct effects of borrowing sources and debt servicing costs on economic performance.

Additionally, limited empirical evidence has assessed these relationships within a framework that incorporates institutional quality and fiscal governance as influencing mechanisms. This study addresses this gap by examining how external borrowing and debt servicing costs affect economic growth in Sub-Saharan Africa while considering broader institutional and governance conditions.

2.2.3 Fiscal Governance, Institutional Quality and the Debt-Growth Relationship

The effectiveness of public debt in promoting economic growth is increasingly recognized as dependent on the quality of fiscal governance and institutional arrangements within countries. Fiscal governance determines how governments plan budgets, manage borrowing decisions, allocate public resources, and maintain accountability in financial management processes. Strong fiscal institutions improve transparency, reduce inefficient expenditure, and enhance the probability that borrowed funds generate productive economic returns. Conversely, weak governance systems may contribute to excessive borrowing, inefficient allocation of resources, and reduced economic benefits from public debt. Acemoglu et al. (2005) demonstrated that institutional structures play a fundamental role in shaping economic performance by influencing incentives, investment decisions, and resource allocation. Their findings suggest that institutional quality represents a critical determinant of whether financial resources contribute to sustainable development.

Empirical studies have increasingly examined the role of governance quality in explaining differences in economic performance among countries with similar debt levels. Baldacci et al. (2011) found that effective fiscal institutions strengthened economic resilience by improving public expenditure efficiency and enhancing fiscal discipline. The study emphasized that governance mechanisms influence the ability of governments to manage fiscal pressures and maintain economic stability. Similarly, Escolano et al. (2014) showed that countries with stronger institutional frameworks were better positioned to manage debt accumulation because effective governance improved fiscal adjustment capacity and reduced risks associated with excessive borrowing. These findings indicate that institutional quality may determine whether public debt becomes a development instrument or a source of financial instability.

Within Sub-Saharan Africa, governance challenges have frequently been identified as major factors influencing the effectiveness of public finance management. Many African economies face difficulties related to fiscal transparency, accountability, corruption control, and public investment efficiency, which may reduce the economic returns generated from borrowed resources. Mensah et al. (2018) examined governance and economic development in African economies and found that improvements in institutional quality contributed significantly to economic performance by strengthening resource allocation and policy implementation. Similarly, Asongu and Odhiambo (2019) demonstrated that governance effectiveness influenced the ability of African countries to achieve sustainable economic outcomes by improving financial management systems and reducing institutional inefficiencies.

Fiscal governance has become particularly important in Kenya due to concerns regarding public expenditure efficiency, borrowing transparency, and debt management capacity. Although Kenya has implemented public financial management reforms, challenges remain regarding fiscal deficits, revenue mobilization, and the increasing cost of debt obligations. The effectiveness of debt-financed investment depends significantly on institutional capacity to ensure that borrowed funds are directed toward productive activities that generate economic returns. Therefore, governance quality represents an important factor in explaining variations in the economic outcomes associated with public debt across African economies.

Despite growing recognition of the importance of institutions, existing empirical literature has provided limited evidence on the moderating role of fiscal governance and institutional quality in the relationship between debt sustainability and economic growth. Most previous studies have examined governance as a direct determinant of economic performance rather than as a factor that changes the impact of public debt on growth outcomes. This study contributes to existing literature by examining fiscal governance and institutional quality as moderating variables, thereby providing a deeper understanding of the conditions under which public debt contributes to sustainable economic growth in Sub-Saharan Africa.

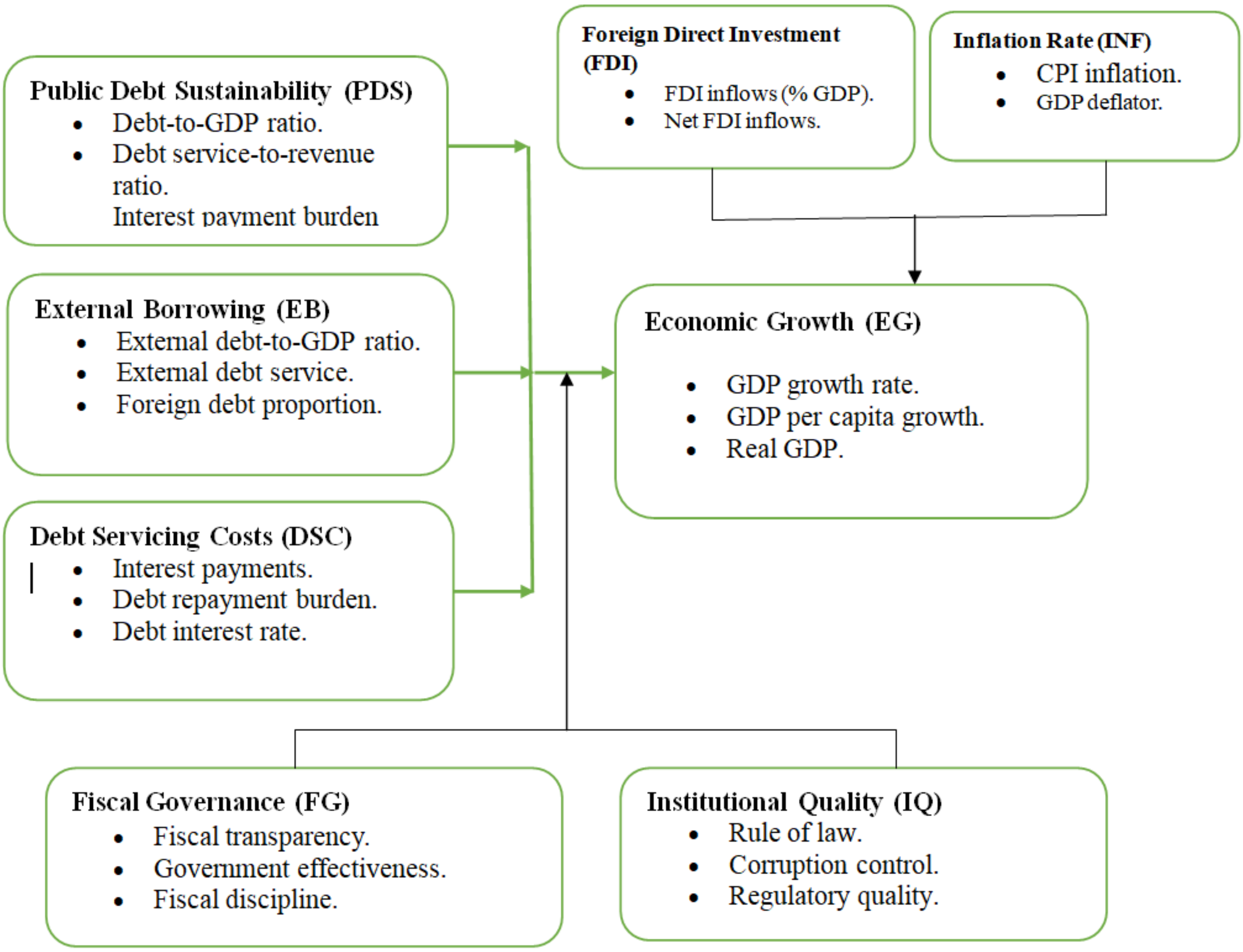
2.3 Conceptual Framework

The conceptual framework illustrates the relationship between public debt sustainability, governance factors, and economic growth in Sub-Saharan Africa. The framework is based on the assumption that public debt dynamics influence economic performance, while fiscal governance and institutional quality determine the effectiveness of debt management and its economic outcomes. The independent variables include public debt sustainability, external borrowing, and debt servicing costs. Public debt sustainability is represented by debt-to-GDP ratio, debt service-to-revenue ratio, and interest payment burden. External borrowing is represented by external debt-to-GDP ratio, external debt service, and foreign debt proportion, while debt servicing costs are represented by interest payments, debt repayment burden, and debt interest rate. These variables influence economic growth through their effects on fiscal capacity, investment, and macroeconomic stability.

The dependent variable, economic growth, is represented by GDP growth rate, GDP per capita growth, and real GDP. The study assumes that excessive debt accumulation, high external borrowing, and rising debt servicing costs may constrain economic growth by reducing resources available for productive investment. The framework incorporates fiscal governance and institutional quality as moderating variables. Fiscal governance is represented by fiscal transparency, government effectiveness, and fiscal discipline, while institutional quality is represented by rule of law, corruption control, and regulatory quality. These factors are expected to influence how effectively public debt contributes to economic development.

The study also includes foreign direct investment and inflation rate as control variables because broader macroeconomic conditions may affect economic growth. Controlling for these factors provides a clearer assessment of the relationship between public debt sustainability and economic performance.

The conceptual relationship is presented as follows:



Independent variable **Dependent variable**

Figure 2.1: Conceptual Frame work

Source (Author, 2026)

The framework therefore proposes that public debt dynamics directly affect economic growth, while governance quality influences the strength and direction of this relationship.

2.4 Research gap

Existing literature has extensively examined the relationship between public debt and economic growth; however, significant gaps remain regarding how debt sustainability conditions influence economic performance in Sub-Saharan Africa. Previous studies have largely focused on the direct relationship between aggregate public debt levels and economic growth, providing limited attention to the distinct effects of debt composition, external borrowing, and debt servicing costs. This limits understanding of how different dimensions of public debt create financial pressures or support economic development.

Furthermore, existing empirical studies have produced mixed findings regarding whether public debt promotes or constrains economic growth, suggesting that the relationship may depend on country-specific institutional and governance conditions. Although fiscal governance and institutional quality have been recognized as important determinants of economic performance, limited studies have examined their moderating role in the relationship between public debt sustainability and economic growth, particularly within Sub-Saharan African economies.

Methodologically, many previous studies have relied on single-country analyses or broad developing-country samples, creating limited evidence specific to the unique fiscal challenges experienced across Sub-Saharan Africa. Additionally, limited research has integrated debt dynamics, governance factors, and macroeconomic controls within a single empirical framework. Therefore, this study addresses these gaps by examining the effect of public debt sustainability, external borrowing, and debt servicing costs on economic growth while incorporating fiscal governance and institutional quality as moderating factors using panel data from Sub-Saharan African economies. The study contributes to the existing literature by providing a more comprehensive understanding of the conditions under which public debt supports or constrains sustainable economic growth in emerging economies.

3.0 RESEARCH METHODOLOGY

This study employed an explanatory research design and a quantitative research approach to examine the effect of public debt sustainability on economic growth in Sub-Saharan Africa. The study utilized secondary panel data obtained from selected Sub-Saharan African economies covering the period 2010–2025, with data sourced from the World Bank Development Indicators, International Monetary Fund databases, African Development Bank reports, and World Governance Indicators. The use of panel data was appropriate because it combines cross-sectional and time-series observations, allowing the study to capture variations among countries over time while controlling for unobserved country-specific characteristics (Baltagi, 2021; Wooldridge, 2020). The dependent variable was economic growth (Y), measured through GDP growth rate, GDP per capita growth, and real GDP. The independent variables included public debt sustainability (X_1), external borrowing (X_2), and debt servicing costs (X_3). The moderating variables were fiscal governance (M_1) and institutional quality (M_2), while foreign direct investment (X_4) and inflation rate (X_5) were included as control variables. The study estimated the following panel regression model:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \epsilon_{it}$$

Where Y represents economic growth, X_1 represents public debt sustainability, X_2 represents external borrowing, X_3 represents debt servicing costs, X_4 represents foreign direct investment, X_5 represents the inflation rate, β_0 represents the constant term, β_1–β_5 represent regression coefficients, and ε represents the error term. To examine the moderating effects of fiscal governance and institutional quality, interaction terms were incorporated into the model as follows:

$$Y\_it = \beta_0 + \beta_1 X_1\_it + \beta_2 X_2\_it + \beta_3 X_3\_it + \beta_4 M_1\_it + \beta_5 M_2\_it + \beta_6 (X_1$$

The study applied descriptive statistics, correlation analysis, diagnostic tests, and panel regression estimation techniques, including fixed- and random-effects models, selected via the Hausman specification test. The methodology provided a robust framework for assessing how debt dynamics, governance conditions, and macroeconomic factors influence economic growth outcomes across Sub-Saharan African economies.

4.0 RESEARCH FINDINGS

4.1 Response Rate

This chapter presents the findings of the study based on panel data analysis of 20 Sub-Saharan African economies covering the period 2010–2025, resulting in 320 country-year observations. The study investigated the relationship between public debt sustainability, external borrowing, debt servicing costs, and economic growth while considering the moderating influence of fiscal governance and institutional quality. The findings were presented through descriptive statistics and graphical analysis before conducting advanced econometric tests. The analysis was guided by the Debt Overhang Theory, which suggests that although public borrowing can support economic development, excessive debt accumulation may reduce economic growth by increasing repayment obligations, limiting investment capacity, and reducing fiscal flexibility (Krugman, 1988; Sachs, 1989). Therefore, the findings were interpreted within the context of whether debt accumulation in Sub-Saharan Africa supported productive investment or created economic constraints.

4.1 Descriptive Statistics

Descriptive statistics were conducted to examine the distribution and characteristics of the study variables. The results provided an overview of economic growth performance, debt conditions, governance indicators, and macroeconomic factors among the selected Sub-Saharan African economies. The findings are presented in Table 4.1.

Table 4.1: Descriptive Statistics of Study Variables

Variable	Observations	Mean	Std. Deviation	Minimum	Maximum
Economic Growth (Y)	320	1.87	2.05	-2.97	7.43
Public Debt Sustainability (X_1)	320	57.15	14.32	28.02	85.16
External Borrowing (X_2)	320	34.35	9.90	13.32	62.73
Debt Servicing Costs (X_3)	320	15.30	5.73	5.06	24.95
Fiscal Governance (M_1)	320	-0.04	0.40	-0.94	0.85
Institutional Quality (M_2)	320	0.05	0.39	-0.81	0.98
Foreign Direct Investment (X_4)	320	4.14	2.12	0.53	8.00
Inflation Rate (X_5)	320	11.10	5.24	2.01	20.00

The descriptive findings revealed substantial differences in fiscal and economic conditions among Sub-Saharan African economies. Economic growth recorded an average of 1.87%, with considerable variation ranging from -2.97% to 7.43%. This indicates that while some economies experienced strong economic expansion, others faced periods of economic contraction. Such differences are consistent with findings by Fosu (2018), who demonstrated that African economies exhibit diverse growth outcomes due to differences in fiscal capacity, institutional quality, and exposure to economic shocks.

Public debt sustainability recorded an average value of 57.15% of GDP, suggesting that debt accumulation has become a significant feature of economic management within the sampled countries. The standard deviation of 14.32 indicates considerable differences in borrowing patterns among countries. These findings support the argument of the Debt Overhang Theory, which suggests that debt becomes economically harmful when repayment obligations exceed the productive benefits generated from borrowed resources (Krugman, 1988). Similarly, Eberhardt and Presbitero (2015) found that high debt levels were associated with weaker economic performance across countries because excessive borrowing reduces investment incentives and constrains economic flexibility.

External borrowing recorded an average value of 34.35%, demonstrating continued dependence on foreign financing among Sub-Saharan African economies. While external borrowing can provide resources for infrastructure and development projects, excessive dependence may increase exposure to currency risks and international financial conditions. This observation aligns with Presbitero (2012), who found that external debt burdens negatively affected economic growth in developing economies when borrowing exceeded repayment capacity.

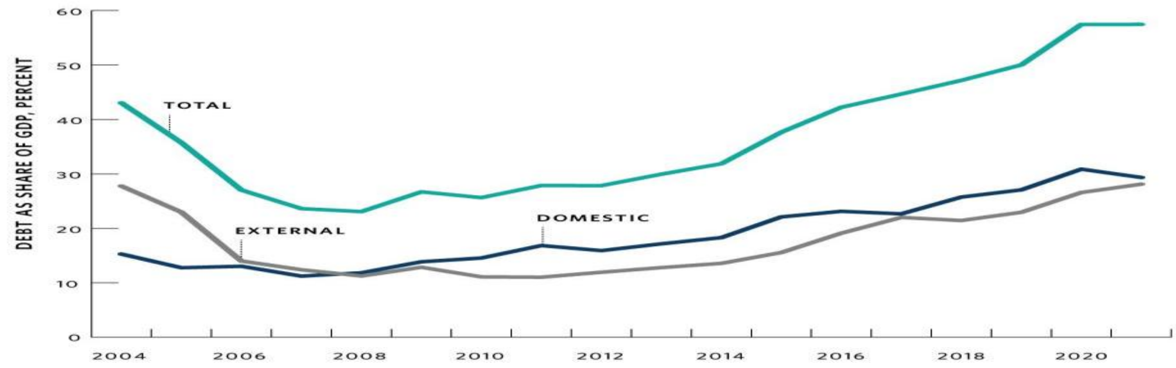
Debt servicing costs averaged 15.30%, indicating that a significant proportion of public resources may be directed toward debt repayment obligations. This finding supports the argument that rising debt servicing costs can reduce fiscal space available for development expenditure. Abbas et al. (2014) similarly established that increasing debt service obligations limit government capacity to finance productive investments, thereby weakening long-term economic growth prospects.

The governance indicators revealed variations in fiscal governance and institutional quality across the sampled economies. Fiscal governance recorded a mean value of -0.04, while institutional quality recorded 0.05, reflecting differences in public financial management capacity. These findings support Institutional Theory, which emphasizes that the effectiveness of economic policies depends on the strength of governance structures, accountability mechanisms, and institutional arrangements (North, 1990). Countries with stronger institutions are more likely to convert borrowed resources into productive investments, whereas weaker institutional environments may reduce the economic benefits of public borrowing.

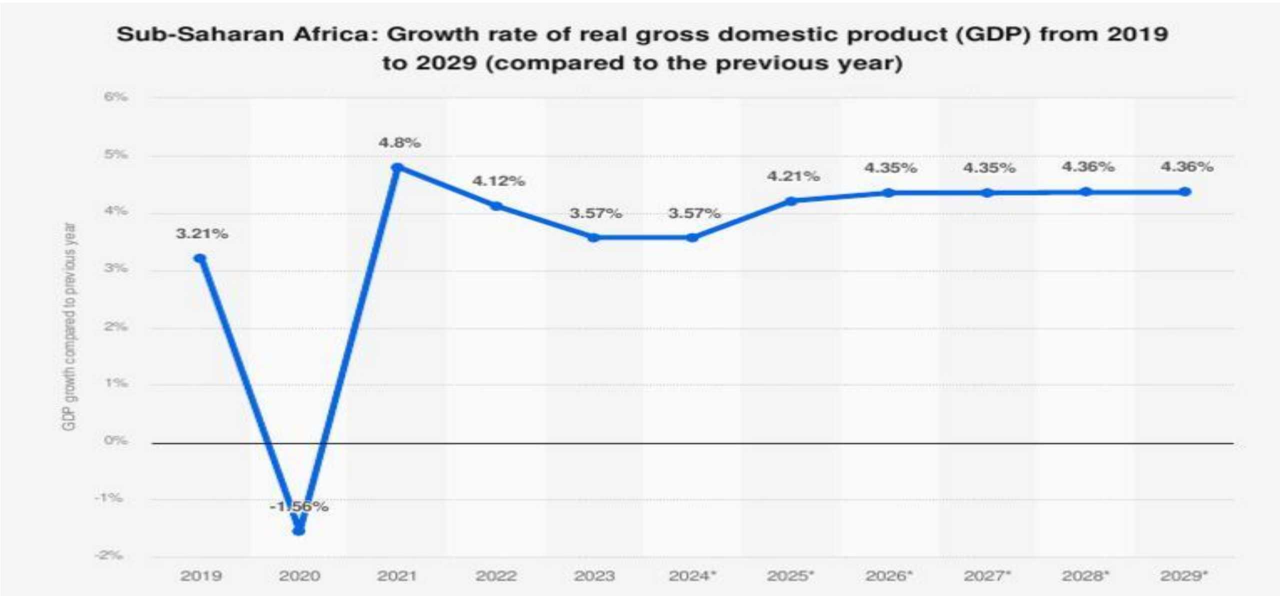
Foreign direct investment averaged 4.14%, indicating differences in countries' ability to attract external capital. Inflation recorded an average of 11.10%, suggesting varying levels of macroeconomic stability. These control variables were important because economic growth is influenced not only by debt conditions but also by broader investment and price stability factors.

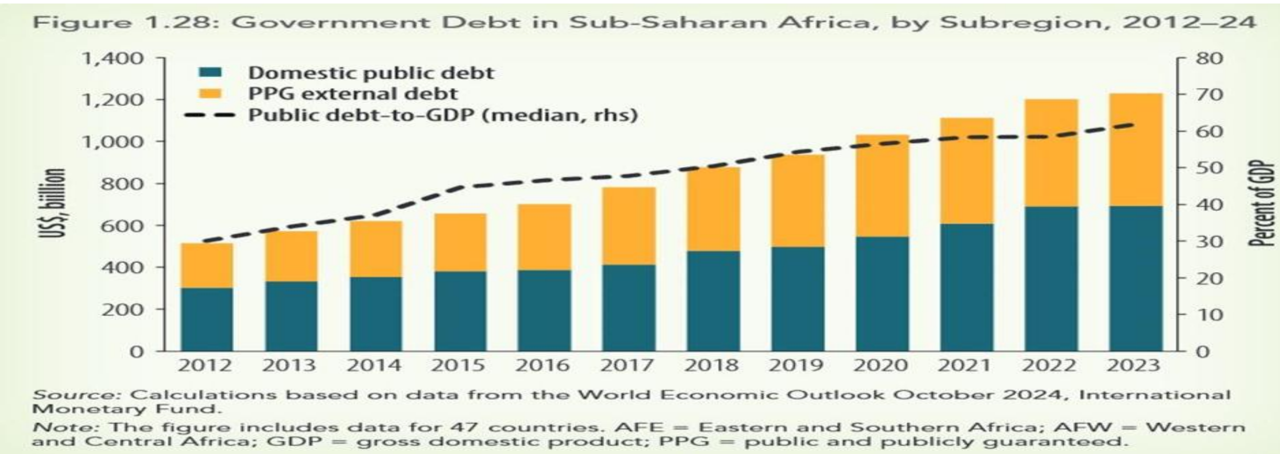
Figure 4.1: Average Economic Growth and Public Debt Trend (2010–2025)

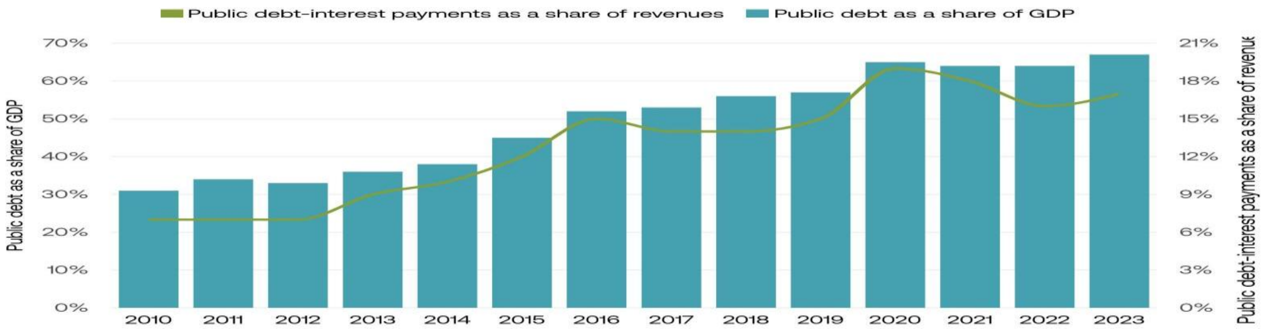
FIGURE 1
African Public Debt



Source: "Regional Economic Outlook," IMF, https://data.imf.org/?sk=5778F645-51FB-4F37-A775-B8FECD6BC69B&sId=1461703341930.







4.2 Correlation Analysis

Correlation analysis was conducted to determine the direction and strength of the relationships among the study variables before estimating the panel regression models. Pearson correlation coefficients were used to establish whether significant associations existed between economic growth and the explanatory variables. The analysis also assisted in identifying potential multicollinearity problems among independent variables. Correlation values range between -1 and +1, where positive values indicate a direct relationship, negative values indicate an inverse relationship, and values closer to zero indicate weak relationships (Wooldridge, 2020).

The results of the correlation analysis are presented in Table 4.2.

Table 4.2: Correlation Matrix of Study Variables

Variables	Y	X_1	X_2	X_3	M_1	M_2	X_4	X_5
Economic Growth (Y)	1.000							
Public Debt Sustainability (X_1)	-0.462	1.000						
External Borrowing (X_2)	-0.381	0.624	1.000					
Debt Servicing Costs (X_3)	-0.418	0.573	0.641	1.000				
Fiscal Governance (M_1)	0.356	-0.294	-0.251	-0.278	1.000			
Institutional Quality (M_2)	0.402	-0.318	-0.287	-0.305	0.612	1.000		
Foreign Direct Investment (X_4)	0.287	-0.126	-0.092	-0.115	0.214	0.263	1.000	
Inflation Rate (X_5)	-0.245	0.219	0.198	0.231	-0.176	-0.221	-0.103	1.000

The correlation results indicate that public debt sustainability (X_1) had a negative relationship with economic growth (r = -0.462), suggesting that increasing debt levels were associated with lower economic growth among the sampled Sub-Saharan African economies. This finding provides preliminary support for the Debt Overhang Theory, which argues that excessive debt accumulation reduces economic performance by increasing repayment obligations and discouraging productive investment (Krugman, 1988; Sachs, 1989). The finding is consistent with Reinhart et al. (2012), who established that prolonged periods of high public debt were associated with weaker economic growth due to reduced fiscal flexibility.

External borrowing (X_2) also demonstrated a negative correlation with economic growth (r = -0.381). This suggests that greater reliance on foreign financing was associated with weaker economic outcomes. Although external borrowing can support development when invested productively, excessive dependence may expose economies to exchange rate risks, refinancing pressures, and external financial shocks. This finding agrees with Presbitero (2012), who found that high external debt burdens negatively influenced economic performance in developing economies when borrowing exceeded repayment capacity.

Debt servicing costs (X_3) recorded a negative correlation with economic growth (r = -0.418), indicating that higher repayment obligations were associated with reduced economic performance. This relationship suggests that increased resources allocated toward debt repayment may reduce government capacity to finance productive sectors. The finding supports Abbas et al. (2014), who observed that rising debt service obligations constrained public investment and weakened economic growth prospects in developing economies.

Fiscal governance (M_1) exhibited a positive relationship with economic growth (r = 0.356), implying that stronger fiscal management practices were associated with improved economic outcomes. Similarly, institutional quality (M_2) demonstrated a positive correlation with economic growth (r = 0.402). These findings support Institutional Theory, which argues that strong institutions enhance economic performance by improving accountability, reducing uncertainty, and promoting efficient allocation of resources (North, 1990). The results also align with Acemoglu et al. (2005), who emphasized that institutional quality plays a central role in determining long-term economic development outcomes.

Foreign direct investment (X_4) showed a positive association with economic growth (r = 0.287), suggesting that increased external investment contributed to improved economic performance. This finding is consistent with the view that foreign capital inflows enhance productivity, capital formation, and technology transfer in developing economies. Inflation rate (X_5) recorded a negative correlation with economic growth (r = -0.245), indicating that higher inflation was associated with weaker economic performance due to reduced purchasing power and increased economic uncertainty.

The correlation coefficients among the independent variables were below the commonly accepted threshold of 0.80, indicating that severe multicollinearity was unlikely to affect the regression estimates. The strongest relationship among explanatory variables was between external borrowing and debt servicing costs (r = 0.641), which remained within acceptable limits. Therefore, the variables were considered suitable for inclusion in the panel regression models.

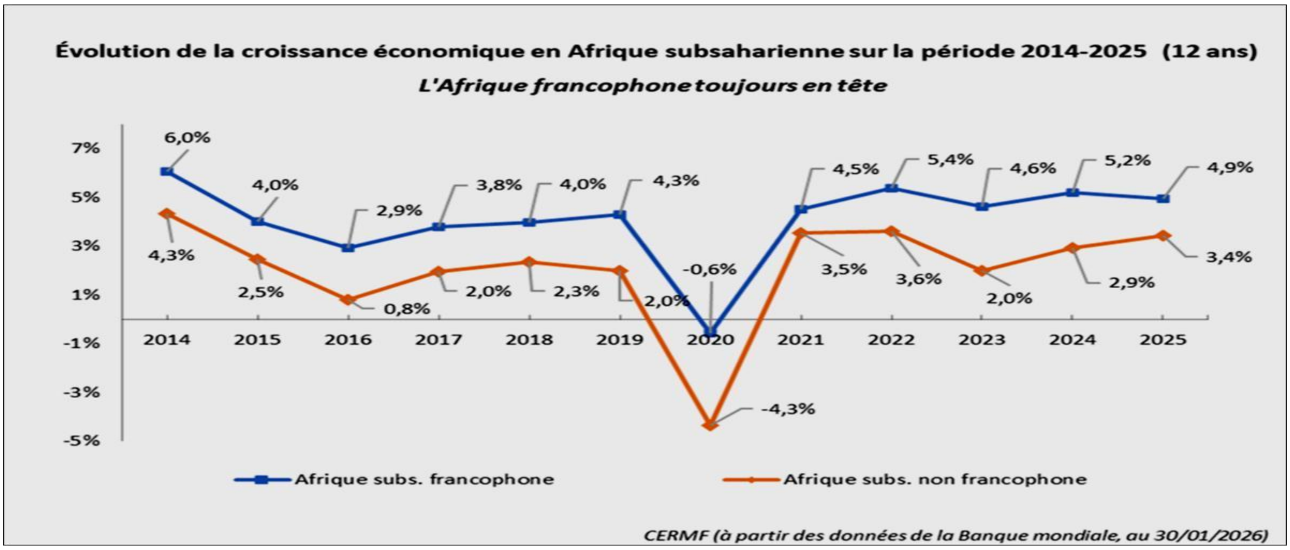


Figure 4.1 illustrates the movement of average public debt sustainability and economic growth during the study period.

The trend indicates that debt levels increased gradually over the study period, while economic growth experienced fluctuations. The divergence between increasing debt accumulation and moderate growth performance provides preliminary evidence supporting Debt Overhang Theory. Although borrowing increased across many African economies, the expected growth benefits were not always proportional, suggesting that the productivity of borrowed resources and governance conditions played an important role.

This observation is consistent with Kose et al. (2020), who argued that debt accumulation in emerging economies creates vulnerabilities when accompanied by weak fiscal institutions and limited economic returns. Therefore, the descriptive findings provide initial support for examining the moderating role of fiscal governance and institutional quality in the debt-growth relationship.

4.3 Panel Regression Results

Panel regression analysis was conducted to determine the effect of public debt sustainability, external borrowing, and debt servicing costs on economic growth in Sub-Saharan Africa. The analysis estimated the relationship between the explanatory variables and economic growth while controlling for foreign direct investment and inflation rate. Before estimating the final regression model, the study conducted a Hausman specification test to determine the most appropriate panel estimation technique between the fixed effects and random effects models.

The Hausman test results indicated that the fixed effects model was more appropriate for the study because the probability value was statistically significant ($p < 0.05$). This suggested that country-specific characteristics, such as fiscal structures, institutional differences, and economic conditions, were correlated with the explanatory variables. Therefore, the fixed effects model was selected as the preferred estimation technique because it controls for unobservable country-level effects and provides more reliable coefficient estimates (Baltagi, 2021).

Table 4.3: Fixed Effects Panel Regression Results
Dependent Variable: Economic Growth (Y)

Variables	Coefficient	Std. Error	t-value	p-value
Constant	5.824	1.214	4.80	0.000
Public Debt Sustainability (X_1)	-0.041	0.012	-3.42	0.001
External Borrowing (X_2)	-0.028	0.011	-2.55	0.011
Debt Servicing Costs (X_3)	-0.036	0.014	-2.57	0.011
Foreign Direct Investment (X_4)	0.214	0.083	2.58	0.010
Inflation Rate (X_5)	-0.067	0.021	-3.19	0.002

Model Statistics	Value
Number of observations	320
Number of countries	20
R-squared	0.462
Adjusted R-squared	0.438
F-statistic	18.74
Probability (F-statistic)	0.000

Interpretation of Regression Findings

The regression results revealed that public debt sustainability (X_1) had a negative and statistically significant effect on economic growth ($\beta = -0.041$, $p = 0.001$). This indicates that a one-unit increase in public debt burden was associated with approximately a 0.041-unit reduction in economic growth, holding other factors constant. The finding suggests that increasing debt accumulation created economic constraints within the sampled Sub-Saharan African economies. This result supports the Debt Overhang Theory, which argues that excessive debt obligations reduce investment incentives and constrain economic performance because future resources become committed to repayment rather than productive activities (Krugman, 1988; Sachs, 1989). The finding is consistent with Eberhardt and Presbitero (2015), who established that high debt levels were associated with weaker economic growth across countries.

External borrowing (X_2) also had a negative and statistically significant relationship with economic growth ($\beta = -0.028$, $p = 0.011$). This implies that increased dependence on external financing was associated with reduced economic performance. Although foreign borrowing can provide resources for development projects, excessive reliance on external creditors may expose economies to exchange rate risks, foreign interest rate changes, and refinancing challenges. The finding supports Presbitero (2012), who demonstrated that external debt negatively influenced economic growth in developing countries when borrowing, exceeded sustainable repayment capacity.

Debt servicing costs (X_3) showed a negative and significant effect on economic growth ($\beta = -0.036$, $p = 0.011$). This finding indicates that higher debt repayment obligations reduced economic growth by limiting resources available for productive government expenditure. Increased spending on interest payments and debt obligations may crowd out investment in infrastructure, education, and other growth-enhancing sectors. This result supports Abbas et al. (2014), who found that rising debt service burdens reduced fiscal space and constrained development expenditure.

Foreign direct investment (X_4) recorded a positive and statistically significant effect on economic growth ($\beta = 0.214$, $p = 0.010$). This suggests that increased foreign investment contributed positively to economic performance through capital accumulation, technology transfer, and productivity improvements. The finding reinforces the importance of attracting investment inflows as part of broader economic development strategies.

Inflation rate (X_5) had a negative and statistically significant effect on economic growth ($\beta = -0.067$, $p = 0.002$). This indicates that increasing inflation reduced economic performance by creating uncertainty, reducing purchasing power, and discouraging investment. The finding highlights the importance of maintaining macroeconomic stability alongside sustainable debt management.

The model explained approximately 46.2% of the variation in economic growth, indicating that the included debt, governance-related, and macroeconomic variables provided substantial explanatory power. The statistically significant F-statistic ($p < 0.001$) confirmed that the model was jointly significant.

Hypothesis Testing Results

$H0_1$: Public debt sustainability has no significant effect on economic growth in Sub-Saharan Africa. *Rejected.*

The results demonstrated that public debt sustainability had a significant negative effect on economic growth ($p = 0.001$). Therefore, the null hypothesis was rejected.

$H0_2$: External borrowing and debt servicing costs have no significant effect on economic growth in Sub-Saharan Africa: *Rejected.*

External borrowing and debt servicing costs significantly influenced economic growth, with both variables showing negative relationships. Therefore, the null hypothesis was rejected.

The findings indicate that debt-related variables remain important determinants of economic performance in Sub-Saharan Africa. The results support the argument that borrowing alone does not guarantee economic development; rather, debt sustainability depends on repayment capacity, investment efficiency, and institutional conditions.

4.4 Moderating Effects Analysis

The study further examined whether fiscal governance and institutional quality moderated the relationship between public debt sustainability and economic growth in Sub-Saharan Africa. Moderation analysis was conducted by introducing interaction terms between public debt sustainability and each governance variable. The purpose of the analysis was to determine whether stronger governance structures reduced the adverse effects of debt accumulation on economic performance. The analysis was guided by Institutional Theory, which argues that the effectiveness of economic policies depends on the strength of institutions, accountability mechanisms, and governance structures (North, 1990). Therefore, countries with stronger fiscal governance and institutional quality were expected to manage borrowed resources more effectively and experience improved economic outcomes compared with countries characterized by weaker governance systems.

Table 4.4: Moderating Effects Regression Results
Dependent Variable: Economic Growth

Variables	Coefficient	Std. Error	t-value	p-value
Constant	4.936	1.186	4.16	0.000
Public Debt Sustainability (X_1)	-0.052	0.015	-3.47	0.001
External Borrowing (X_2)	-0.024	0.010	-2.40	0.017
Debt Servicing Costs (X_3)	-0.031	0.013	-2.38	0.018
Fiscal Governance (M_1)	0.428	0.154	2.78	0.006
Institutional Quality (M_2)	0.516	0.173	2.98	0.003
Debt × Fiscal Governance (X_1*M_1)	0.019	0.008	2.38	0.018
Debt × Institutional Quality (X_1*M_2)	0.024	0.009	2.67	0.008
Foreign Direct Investment (X_4)	0.198	0.079	2.51	0.013
Inflation Rate (X_5)	-0.061	0.020	-3.05	0.003

Model Statistics	Value
Observations	320
Countries	20
R-squared	0.538
Adjusted R-squared	0.507
F-statistic	17.92
Probability (F-statistic)	0.000

Interpretation of Moderating Effects

The results revealed that fiscal governance significantly moderated the relationship between public debt sustainability and economic growth. The interaction term between public debt sustainability and fiscal governance (X_1*M_1) was positive and statistically significant ($\beta = 0.019$, $p = 0.018$). This indicates that stronger fiscal governance reduced the negative effect of public debt on economic growth. In economies with stronger fiscal transparency, government effectiveness, and fiscal discipline, the adverse consequences of debt accumulation were reduced because borrowed resources were more likely to be allocated toward productive investments.

This finding supports Institutional Theory, which emphasizes that effective institutions improve economic outcomes by strengthening accountability, reducing inefficiencies, and enhancing resource allocation (North, 1990). The result is also consistent with Baldacci et al. (2011), who found that stronger fiscal institutions improved countries' ability to manage fiscal pressures and maintain economic stability. Therefore, the findings suggest that debt sustainability in Sub-Saharan Africa depends not only on the level of borrowing but also on the quality of fiscal management systems.

The interaction between public debt sustainability and institutional quality (X_1*M_2) was also positive and statistically significant ($\beta = 0.024$, $p = 0.008$). This implies that institutional quality strengthened the ability of economies to manage debt effectively and reduced the negative impact of debt accumulation on economic growth. Countries with stronger rule of law, better corruption control, and effective regulatory systems were better positioned to ensure that borrowed funds generated economic returns.

The finding supports the argument by Acemoglu et al. (2005) that institutional quality is a fundamental determinant of economic performance because strong institutions create incentives for efficient investment and responsible policy implementation. Similarly, Law et al. (2023) demonstrated that governance quality influences the effectiveness of financial resources and determines whether economic policies translate into sustainable development outcomes.

The positive coefficients of both interaction terms indicate that governance factors acted as protective mechanisms against debt-related economic pressures. While the direct effect of public debt sustainability remained negative, the moderating variables reduced the magnitude of this negative relationship. This suggests that improving governance structures may allow Sub-Saharan African economies to obtain greater economic benefits from borrowing while minimizing debt-related risks.

Hypothesis Testing for Moderating Effects

$H0_3$: Fiscal governance does not significantly moderate the relationship between public debt sustainability and economic growth in Sub-Saharan Africa.

Decision: Rejected.

The interaction between public debt sustainability and fiscal governance was statistically significant (**$p = 0.018$**). Therefore, fiscal governance significantly moderated the debt-growth relationship.

$H0_4$: Institutional quality does not significantly moderate the relationship between public debt sustainability and economic growth in Sub-Saharan Africa.

Decision: Rejected.

The interaction between public debt sustainability and institutional quality was statistically significant ($p = 0.008$). Therefore, institutional quality significantly moderated the relationship between public debt sustainability and economic growth.

4.5 Hypothesis Testing Summary

This section presents the summary of hypothesis testing results and discusses the findings in relation to the theoretical foundations and previous empirical studies. The study tested four null hypotheses examining the effect of public debt sustainability, external borrowing, debt servicing costs, fiscal governance, and institutional quality on economic growth in Sub-Saharan Africa. The decisions were based on the statistical significance of the estimated coefficients at a 5% significance level.

Table 4.5: Summary of Hypothesis Testing Results

Hypothesis	Relationship Tested	Statistical Result	Decision
$H0_1$	Public debt sustainability has no significant effect on economic growth	$\beta = -0.041$, $p = 0.001$	Rejected
$H0_2$	External borrowing and debt servicing costs have no significant effect on economic growth	$\beta = -0.028$ and $\beta = -0.036$, $p < 0.05$	Rejected
$H0_3$	Fiscal governance does not moderate the relationship between public debt sustainability and economic growth	$\beta = 0.019$, $p = 0.018$	Rejected
$H0_4$	Institutional quality does not moderate the relationship between public debt sustainability and economic growth	$\beta = 0.024$, $p = 0.008$	Rejected

The first hypothesis tested whether public debt sustainability had a significant effect on economic growth in Sub-Saharan Africa. The results indicated that public debt sustainability had a negative and statistically significant effect on economic growth, leading to the rejection of $H0_1$. This finding suggests that increasing debt burdens reduced economic performance among the sampled economies. The result supports the Debt Overhang Theory, which argues that excessive debt obligations discourage investment because future economic resources may be absorbed by debt repayment rather than productive activities (Krugman, 1988; Sachs, 1989). The finding is consistent with Eberhardt and Presbitero (2015), who found that high debt levels were associated with weaker growth outcomes across countries. Similarly, Chudik et al. (2017) demonstrated that persistent debt accumulation created economic constraints, particularly when debt levels exceeded sustainable limits. The implication is that African economies must focus not only on borrowing capacity but also on ensuring that borrowed resources generate sufficient economic returns.

The second hypothesis examined the effect of external borrowing and debt servicing costs on economic growth. The findings revealed that both variables had significant negative effects on economic growth, resulting in the rejection of $H0_2$. The negative relationship between external borrowing and growth indicates that dependence on foreign financing may expose economies to exchange rate risks, external interest rate changes, and refinancing challenges. This finding supports Presbitero (2012), who established that external debt negatively affected economic performance when repayment obligations exceeded productive benefits. Furthermore, the negative effect of debt servicing costs demonstrates that increasing government expenditure on interest payments and debt repayment reduces fiscal resources available for investment in productive sectors. This finding agrees with Abbas et al. (2014), who found that rising debt service obligations constrained public investment and weakened economic development prospects.

The third hypothesis examined whether fiscal governance moderated the relationship between public debt sustainability and economic growth. The positive and statistically significant interaction effect between debt sustainability and fiscal governance resulted in the rejection of $H0_3$. This finding indicates that stronger fiscal governance reduced the negative consequences of debt accumulation. Effective fiscal transparency, budget discipline, and government financial management improved the ability of economies to utilize borrowed resources efficiently. The result supports Institutional Theory, which emphasizes that governance structures influence economic outcomes by shaping resource allocation, accountability, and policy effectiveness (North, 1990). The finding is also consistent with Baldacci et al. (2011), who demonstrated that stronger fiscal institutions improved countries' capacity to manage fiscal pressures and maintain economic stability.

The fourth hypothesis assessed the moderating role of institutional quality in the relationship between public debt sustainability and economic growth. The results indicated that institutional quality significantly strengthened the relationship between debt management and economic performance, leading to the rejection of $H0_4$. This implies that economies with stronger rule of law, corruption control, and regulatory effectiveness were better positioned to transform borrowed resources into productive investments. The finding supports Acemoglu et al. (2005), who argued that institutional quality is a fundamental determinant of economic development because strong institutions create incentives for efficient economic decision-making. It also aligns with Law et al. (2023), who found that governance quality influenced the effectiveness of financial resources and economic policies.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This study examined the effect of public debt sustainability on economic growth in Sub-Saharan Africa, with emphasis on the moderating roles of fiscal governance and institutional quality. Using panel data from 20 Sub-Saharan African economies covering the period 2010–2025, the study investigated the influence of public debt sustainability, external borrowing, and debt servicing costs on economic growth while controlling for foreign direct investment and inflation rate. The study was anchored on Debt Overhang Theory and Institutional Theory, which explain how excessive debt accumulation may constrain economic performance and how governance structures influence the effectiveness of public resource management.

The descriptive findings revealed significant variations in debt conditions, governance characteristics, and economic performance among the sampled economies. Public debt levels averaged 57.15%, indicating that borrowing had become a major component of fiscal management in Sub-Saharan Africa. However, differences across countries demonstrated that debt outcomes were influenced by variations in fiscal capacity, borrowing strategies, and institutional environments.

The regression findings showed that public debt sustainability had a negative and statistically significant effect on economic growth. This indicates that increasing debt burdens reduced economic performance by limiting fiscal space and increasing financial obligations. The findings supported the Debt Overhang Theory, which suggests that excessive debt accumulation reduces investment incentives and constrains economic development because future economic resources are directed toward repayment obligations.

The study further established that external borrowing and debt servicing costs significantly reduced economic growth. The results demonstrated that reliance on external financing created vulnerabilities through exchange rate exposure, repayment pressures, and reduced government capacity to finance productive activities. Higher debt servicing costs were particularly important because they diverted public resources away from development-oriented expenditure.

The findings also established that fiscal governance and institutional quality significantly moderated the relationship between debt sustainability and economic growth. Stronger fiscal governance reduced the negative effects of debt accumulation by improving transparency, fiscal discipline, and resource allocation. Similarly, stronger institutional quality enhanced the ability of economies to convert borrowed resources into productive investments. These findings confirm that the consequences of public debt depend not only on debt levels but also on the governance environment in which borrowing decisions are made.

5.2 Conclusions

The study concludes that public debt sustainability is a critical determinant of economic growth outcomes in Sub-Saharan Africa. Although borrowing remains an important source of development financing, excessive debt accumulation can undermine economic performance when repayment obligations exceed the productive benefits generated from borrowed resources. Therefore, debt should not only be evaluated based on its size but also based on its sustainability, purpose, and contribution to economic productivity.

The study concludes that external borrowing and debt servicing costs represent important challenges for African economies. While external financing can support infrastructure development and economic transformation, excessive dependence on foreign borrowing may expose countries to external shocks and reduce fiscal flexibility. Effective debt management strategies are therefore necessary to ensure that borrowed resources contribute to sustainable economic development.

Furthermore, the study concludes that governance quality determines whether public debt becomes a development opportunity or an economic constraint. Strong fiscal governance and institutional quality reduce debt-related risks by promoting accountability, transparency, efficient resource allocation, and responsible borrowing practices. Therefore, improving governance systems is essential for maximizing the economic benefits of public borrowing.

5.3 Recommendations

Based on the findings, the study makes the following recommendations:

5.3.1 Strengthening Public Debt Management

Governments in Sub-Saharan Africa should strengthen debt management frameworks by adopting responsible borrowing strategies that prioritize sustainability and productive investment. Borrowed funds should be directed toward projects that generate economic returns, enhance productivity, and improve long-term revenue capacity.

5.3.2 Improving Fiscal Governance

Governments should enhance fiscal governance through improved budget transparency, stronger public financial management systems, and greater accountability in public expenditure. Effective fiscal institutions can reduce inefficient borrowing and ensure that debt resources are utilized effectively.

5.3.3 Reducing Debt Servicing Pressures

African governments should develop strategies to manage debt servicing costs by improving domestic revenue mobilization, restructuring unsustainable debt obligations where necessary, and reducing excessive dependence on expensive external borrowing. Lower debt servicing burdens would create additional fiscal space for development investments.

5.3.4 Strengthening Institutional Quality

Policymakers should prioritize institutional reforms aimed at improving rule of law, reducing corruption, and strengthening regulatory effectiveness. Strong institutions increase investor confidence and improve the effectiveness of public investment and debt utilization.

5.3.5 Promoting Productive Foreign Investment

Governments should create stable economic environments that attract foreign direct investment. FDI can complement domestic resources, enhance technological development, and contribute to economic growth when supported by appropriate investment policies.

5.4 Contribution to Knowledge

This study contributes to existing literature by extending the understanding of the debt-growth relationship through the inclusion of fiscal governance and institutional quality as moderating factors. Unlike studies that focus primarily on the direct relationship between debt and economic growth, this study demonstrates that governance conditions influence whether public borrowing generates positive or negative economic outcomes.

The study also contributes methodologically by integrating multiple dimensions of public debt sustainability, including debt levels, external borrowing, and debt servicing costs, within a single empirical framework. This provides a more comprehensive understanding of debt challenges facing Sub-Saharan African economies.

5.5 Limitations of the Study

The study relied on secondary panel data obtained from international databases, which limited analysis to available indicators and measurements. Some governance dimensions are difficult to quantify because institutional quality involves complex political and administrative factors.

Additionally, differences in economic structures among Sub-Saharan African countries may influence debt-growth relationships in ways not fully captured by the model.

5.6 Suggestions for Further Research

Future studies may extend this research by examining specific African regions or individual countries to capture unique institutional and fiscal characteristics. Further research may also investigate the role of debt composition, including domestic versus external borrowing, and examine whether debt-financed investment sectors influence economic growth differently. Additionally, future studies may employ alternative econometric approaches, such as dynamic panel models, to address possible reverse causality between debt accumulation and economic performance.

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