

Remittances and Economic Growth in Selected Countries in Sub-Saharan Africa

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DOI: <https://dx.doi.org/10.47772/IJRISS.2025.910000066>

Received: 04 October 2025; Accepted: 06 October 2025; Published: 04 November 2025

ABSTRACT

This study examines the relationship between remittances and economic growth in ten selected countries in Sub-Saharan Africa (SSA) from 2000 to 2023 using annual data from the World Bank. Anchored on the Two-Gap Model and an ex-post facto research design, this study employed cross-sectional dependence, unit root, and Granger causality tests, alongside Panel Estimated Generalized Least Squares (EGLS) with cross-section Seemingly Unrelated Regression (SUR) weights to account for heteroskedasticity and cross-sectional dependence across countries. Economic growth (dependent variable) was proxied by GDP per capita growth, while remittances, trade openness, and foreign direct investment (FDI) served as explanatory variables. The results indicate that remittances and FDI significantly promote economic growth, whereas trade openness exerts a negative but insignificant effect. The results also revealed a unidirectional causality from remittances to growth in the selected countries. This study concludes that remittances play a critical role in fostering growth in the region. It recommends, among other things, that governments in Sub-Saharan African countries should enhance diaspora engagement and implement policies that reduce remittance transfer costs through mobile banking and streamlined financial systems.

Keywords: Remittances, Economic Growth, Sub-Saharan Africa, Gross Domestic Product

INTRODUCTION

Over time, diverse forms of international capital have consistently contributed to the economic development of less developed countries. In 2015, global flows of FDI rose by about 40 percent, to \$1.8 trillion, the highest level since the global economic and financial crisis began in 2008 (UNCTAD, 2016). Remittances, surpassing FDI flows in 2018, are predicted by some scholars, such as Ratha (2019), to become the primary external financial source for developing nations, propelled by skilled migrants and resilient economic conditions in developed economies (Bredtmann et al., 2018).

Sub-Saharan Africa (SSA) is experiencing significant growth in remittances, for example, from US\$31.656 billion in 2010 to US\$49.33 billion in 2019, representing 2.20% and 2.73% of Gross Domestic Product (GDP), respectively (World Bank, 2021). In 2020, Sub-Saharan Africa had the highest adverse COVID-19 remittance inflows impact with a decline of about 12.5 per cent. The World Bank attributed the 12.5% reduction in remittances inflows to Sub-Saharan Africa to the 27.7% reduction in remittances inflows in Nigeria, which accounts for more than 40% of remittance inflows in the Sub-Saharan African region (Ratha et al., 2020).

SSA has long faced significant macroeconomic challenges that have hindered its ability to achieve sustainable growth and improve living standards. Among the most pressing issues in Sub-Saharan Africa is the volatile and often sluggish economic growth experienced by many countries in the region over the decades (Mairafi et al., 2024). This growth pattern, characterized by brief expansions followed by sharp contractions, has made it difficult for countries in the region to build momentum toward long-term development goals. Several factors contribute to this challenge, with one key issue being the role played by foreign capital inflows, specifically,

remittances and external debt (Ocampo & Griffith-Jones, 2022). These forms of foreign capital are essential for financing critical investments and infrastructure necessary for economic development (Addison & Tarp, 2019).

However, the unpredictable nature of these inflows can also contribute to economic imbalance in Sub-Saharan Africa (Mairafi et al., 2024). For instance, remittances, though often stable, can fluctuate due to global economic conditions affecting migrant workers' earnings (Ratha et al., 2020). Hence, the reliance on these types of international capital presents both risks and opportunities for countries in SSA. Chami et al. (2018) opined that remittances are a crucial source of income for many households, often used to support consumption, education, and healthcare, thereby contributing indirectly to economic growth. However, their impact on long-term growth is less clear, as they may not be channelled into productive investments.

Despite the large amount of remittances that flow into SSA, countries in this region have continued to record weak economic performance, particularly economic growth. Various factors have been identified as responsible for this. Examples are: informal remittance transfer channels, poor remittance policies, embezzlement of these remittances by government officials in domestic countries, and the high cost of sending remittances. (see Dinbabo, 2020; UNCTAD, 2013; Adugna, 2019; Isaacs, 2017).

Existing empirical literature predominantly focused on how remittances affect the growth of developing countries, such as Sub-Saharan African countries. The contentious nature of this topic is evident in the disparities between conventional ideas, hypothetical consequences, and empirical results. Some studies have shown that remittances can significantly boost growth by raising household consumption and investment in human capital (Adams & Cuecuecha, 2013). Others, however, argue that remittances may have only a marginal effect on growth, as they are often spent on consumption rather than productive investments (Giuliano & Ruiz-Arranz, 2009). Additionally, there are insufficient studies on the impact of remittances on growth in SSA. These gaps in understanding motivated this study. By utilizing a more recent dataset and employing robust techniques, this research aims to add to the existing studies.

Research Objectives

The broad objective of this study is to examine the relationship between remittances and economic growth in selected countries in Sub-Saharan Africa (Nigeria, Ghana, Senegal, Cameroon, the Republic of Congo, Democratic Republic of Congo, Kenya, Uganda, South Africa, and Zimbabwe). The specific objectives are:

1. To assess the effect of remittances on economic growth in the selected countries in SSA.
2. To investigate the causality between remittances & economic growth in the selected countries in SSA.

Research hypotheses

H₀₁: Remittances do not significantly affect economic growth in the selected countries in SSA.

H₀₂: There is no significant causality between remittances and economic growth in the selected countries in SSA.

The paper is organised into five sections, with section one being introductory, while the rest of the paper is organised as follows: section two provides the empirical and theoretical literature, section three outlines the empirical strategy, section four presents the major findings, and section five concludes, with some policy implications.

LITERATURE REVIEW

Conceptual Clarifications

Remittances: Remittances are money or goods sent by migrants to their families or friends in their home nations. These transfers constitute a crucial source of household income in many developing countries, contributing to poverty reduction, improving living standards, and supporting economic development (Jongwanich & Kohpaiboon, 2019).

Taylor and Mora (2023) conceptualized remittances as encompassing the whole current transfers (cash or kind), exchanged between resident & non-resident households. This definition broadens the concept to include not only money sent by migrants but also any transfers received, providing a more comprehensive view of the financial exchanges between migrants and their home nations. By mentioning both "made" and "received" transfers, it encapsulates the bidirectional flow of resources, which might include, for example, families back home sending goods or money to migrants abroad as well.

Remittance Trends in Sub-Saharan Africa (SSA)

Remittance flows to Sub-Saharan Africa reached \$54 billion in 2023, a slight decrease of -0.3 percent from the previous year. Remittance flows to the region are projected to rise by 1.3 percent in 2024. The increase in remittances into the region helped several African countries with their balance of payments, which were facing problems like not enough food, dry weather, broken supply chains, heavy rains, and trouble paying back debts. For instance, in Ghana, the current account recorded a surplus in 2023Q3 due in part to a strong increase in remittances. Remittances coming into SSA were almost 1.5 times bigger than FDI flows in 2023, and they were more stable. The biggest nations that received remittances in the region in 2023 were Zimbabwe, Kenya, Ghana, and Nigeria. Remittances have become the biggest source of foreign money for many nations in this region. For example, Kenya gets more money from remittances than from its main exports, like tea, coffee, tourism, and growing vegetables. Countries relying more on receipts of remittances as a share of GDP include the Gambia, Lesotho, Comoros, Liberia, and Cabo Verde. Remittances make up more than a fifth of total economic output in the first three countries. (Ratha et. al, 2024).

Table 2.1 Growth rate (%) of remittances of the different regions of the world.

Region	2017	2018	2019	2020	2021	2022	2023e	2024f	2025f
Low- and middle-income countries	9.2	9.7	5.0	-1.1	10.8	8.3	0.7	2.3	2.8
East Asia and Pacific	5.3	6.9	4.0	-8.0	-2.5	2.8	1.8	0.9	1.4
Europe and Central Asia	21.1	12.9	5.2	-7.0	15.4	18.1	-10.3	-1.9	3.6
Latin America and Caribbean	10.9	9.9	8.2	7.4	26.2	10.5	7.7	2.7	1.6
Middle East and North Africa	13.4	1.8	3.9	4.1	12.8	-3.2	-14.8	4.3	5.5
South Asia	6.0	12.3	6.1	5.2	6.7	12.4	5.2	4.2	4.1
Sub-Saharan Africa	9.6	17.1	0.9	-13.8	18.7	6.8	-0.3	1.5	1.5

Source: World Bank (2024). Note: e = estimate; f = forecast

Economic Growth

Economic growth is the increase in the average rate of output produced per person, usually measured on a per annum basis (Ghatak, 1999; Akpokerere & Okoroyibo, 2020). Economic growth is the rate of change in National output or income in a specific period. The increase could come from a rise in the stock of capital, population, or productivity of the labour force, including a breakthrough in technological progress (Aigbokhan, 2020). Nominal growth refers to growth in output with no allowance for price variations (inflation), whereas real growth refers to growth in output with allowance for price variations between the years considered. Growth occurs when the GDP of a nation increases. A nation is said to experience growth if its total output goes up over a certain time (Owamah & Mgbomene, 2025).

Growth Trend in Sub-Saharan Africa

Africa's Pulse report of the World Bank stated that growth in SSA is expected to rebound to 3.4% in 2024 and 3.8% in 2025, after bottoming out at 2.6% in 2023. The rebound from 2023 can be attributed to receding

inflationary pressures within the region, growth resilience in the USA and other large economies, recovery in global trade, as well as increased risk appetite and expected gradual easing of world financial conditions (World Bank, 2024).

The Regional Economic Outlook of the International Monetary Fund (IMF) reported that the economic outlook of Sub-Saharan Africa is mildly improving as a whole, with growth expected to rise from 3.4 percent in 2023 to 3.8 percent in 2024. Two-thirds of nations in SSA expect faster growth in 2024 compared to the previous year, with a median growth rate of 0.6% (IMF, 2024).

Table 2.2 GDP growth (annual %) of the different regions of the world

Year	2019	2020	2021	2022	2023
South Asia (IDA & IBRD)	3.9	-4.6	8.8	6.3	6.4
Euro area	1.6	-6.1	6.0	3.4	0.4
Latin America & Caribbean (excluding high income)	0.7	-6.5	6.8	3.9	2.2
Least developed countries: UN classification	5.0	-0.1	2.8	4.6	3.7
Sub-Saharan Africa	2.7	-2.0	4.3	3.7	3.0
Caribbean small states	1.0	-9.2	10.4	22.5	12.7
East Asia & Pacific (excluding high income)	5.8	1.2	7.6	3.4	5.1
Europe & Central Asia (excluding high income)	2.2	0.3	9.0	3.1	4.6
Lower middle income	4.1	-3.6	6.7	5.8	5.3
Heavily indebted poor countries (HIPC)	4.4	0.2	4.2	4.8	4.4
World	2.6	-2.9	6.3	3.1	2.7

Source: World Development Indicators (2024)

THEORETICAL FRAMEWORK

This study is anchored on Chenery and Strout's (1966) Two-Gap model. The theory that argues that the major limitations to growth in developing nations arise from two potential "gaps," namely:

1. **Savings Gap:** This gap arises when a country's domestic savings are insufficient to finance the investment level needed for growth.
2. **Foreign Exchange Gap:** This gap arises when a country lacks enough foreign exchange earnings to import the capital goods and inputs required for development.

The model proposed that for developing nations to grow, external assistance such as direct investment from foreign countries or persons, foreign aid, or concessional loans is needed to fill either of the two gaps (savings gap or gap in foreign exchange), based on the one that is more binding at a given time. The model can be presented as:

$$Y = C + I + (X - M) \quad (1)$$

In which (X-M) equals the net export.

Equation (1) can be rearranged as:

$$Y + M = C + I + X \quad (2)$$

Further breakdown of (2) above will result in:

$$S + C + M = C + I + X \quad (3)$$

Deducting C from both sides and defining savings ($S = Y - C$),

$$S + M = I + X \quad (4)$$

Equation (4) can be written as:

$$M - X = I - S \quad (5)$$

(Gap in foreign exchange) = (Savings gap).

However, Chenery and Strout's (1966) model has its limitations, which include:

1. Neglect of institutional and structural factors determining economic growth, such as governance, institutions, human capital, & political stability (Todaro & Smith, 2020).
2. Simplistic assumption of a linear relationship: The model assumes a relationship between investment & growth, ignoring inefficiencies, diminishing returns, and the quality of investment (Easterly, 2001).
3. Neglect of domestic policy environment: The model assumes that foreign aid will automatically fill the gap, but aid effectiveness depends heavily on domestic policies, macroeconomic stability, and absorptive capacity (Burnside & Dollar, 2000).

Relevance of the model to this Study

The "Two-Gap Model" is relevant to this study because it provides a theoretical structure for understanding how external financial flows, such as remittances, can address major constraints to growth in developing nations.

First, remittances as a bridge for the savings-investment gap: Many Sub-Saharan African countries face low domestic savings rates. Remittances provide an alternative source of capital, providing households with additional income that can be channelled into small businesses, education, or health, thereby stimulating economic productivity.

Secondly, remittances provide foreign exchange: Sub-Saharan African countries often experience shortages of foreign currency, which restrict their capacity to import capital goods, raw materials, & technology. Remittances, usually sent in foreign currency, boost the foreign exchange reserves, helping alleviate the foreign exchange gap.

Empirical Review

The role played by remittances in economic growth remains a contentious and complex subject, evident from both theoretical and empirical perspectives. Studies such as Giuliano and Ruiz-Arranz (2009) have demonstrated that remittances can promote growth by enhancing entrepreneurial activity & investment, reducing credit constraints, specifically in developing nations where credit markets are less efficient & access is limited (Giuliano & Ruiz-Arranz, 2009). On the contrary, studies such as Narayan et. al (2011) contend that remittances might have an inverse effect on growth.

Baafi and Asiedu (2025) investigated the effect of remittances, savings, and education on economic growth in twenty-three Sub-Saharan African nations from 1974 to 2020, using the system generalized method of moments (GMM) estimation technique. The results showed that remittances, savings, and education have a significant & positive impact on the growth of the region. The study concluded that countries in the region could harness the full potential of remittances to support growth by implementing policies that encourage a savings culture & improve educational outcomes.

Delessa et al. (2024) examined the interplay between remittance inflows and growth in twenty-four Sub-Saharan African nations between 2005 and 2019, taking into account the moderating role of macroeconomic and

institutional stability. The study used a DOLS cointegration method. The long-run results demonstrated a positive correlation between GDP per capita and remittance when interacted with macroeconomic policy. They concluded that addressing institutional quality & macroeconomic stability is important, as they play a key role in moderating the efficacy of remittance inflows & their impact on the growth of the region.

Ikpesu (2024) examined the interactive effect of migrant remittances & financial market development on economic growth in twenty-seven Sub-Saharan African countries covering the period 2000-2020, using the Pool Mean Group (PMG) technique. The findings indicated that the interaction between migrant remittances and financial market development positively & significantly influences growth in the region, suggesting a complementary relationship.

Ikpesu (2023) examined how migrant remittances & financial market development affect per capita real growth in twenty-seven countries in Sub-Saharan Africa between 2000 and 2020, using the Pool Mean Group (PMG) approach. The results showed that remittances positively affect and promote growth in the region. The findings further revealed that equity market development supports growth in the region, while banking sector development does not have a positive effect on growth.

Chhetri (2023) investigated the linkage between remittances and economic growth across the twenty largest remittance-recipient nations over the period of 2009 to 2022, using the ARDL approach in analysing the data. Findings showed that remittance inflows appeared to affect economic growth adversely in the long run. The author recommended that the top remittance-recipient nations need to use remittances productively while addressing their structural problems hindering economic growth, including high dependence on external sources and imports.

Adjei et al. (2020) analysed the impact of remittances on growth in seven Western African countries, for the period 2003-2018, using the VECM as an estimation approach. The result showed that remittances exert a significant positive effect on growth. Also, the real effective exchange rate, trade openness & investment impacted positively on economic growth. The study recommended the need for carefulness in the management of funds sent home by migrants.

Bezabh and Kumar (2020) examined the effect of remittances on the economic growth in five Eastern African countries between 2000 and 2014, using the generalized least squares (GLS). The findings revealed that remittances positively and significantly affect the growth of the selected countries. Further findings indicated that foreign aid & trade openness have an adverse effect on the growth of the region. They recommended that the governments of Eastern African countries should develop a suitable environment for remitters to promote remittance inflows.

Olayungbo and Quadri (2019) studied the relationship between financial development, remittances, & economic growth in twenty Sub-Saharan African nations between 2000 and 2015, using both PMG and ARDL estimations. The study found that remittances & financial development positively affected growth in the short & long runs. Additionally, the findings indicated a unidirectional causality flowing from GDP to remittances across the selected countries. The study recommended improved financial services, financial instruments, and the payment system to foster growth in SSA countries both in the short run and the long run.

Titoe (2019) analysed how financial development & remittances affect economic growth in ECOWAS nations between 2004 and 2016. The study employed both OLS and System GMM. The findings showed that remittances positively impact growth in the ECOWAS countries, whereas financial development has no significant impact on growth. The author emphasized the need to encourage remittance inflows because remittances give the needed credit & insurance that inefficient or non-existent financial markets can't provide.

Kadozi (2019) examined the impact of remittance inflows on economic growth in forty-five Sub-Saharan African countries and Rwanda in particular (a case study) between 1980 and 2014, using random effect, generalized method of moment (GMM), and two-stage least square (2SLS) estimation techniques. The results revealed that remittances have no significant effect on growth in the 45 countries. Conversely, the results revealed that remittances contributed positively & significantly to Rwanda's economic growth. The author concluded that the

institutional environment & financial sector are very important for increasing the growth effect of remittances in the region & Rwanda in particular.

Abdelbagi (2016) investigated the effect of trade, remittances, and outgoing migration on growth in Africa within the period of 1976 and 2015 using GMM and PMG econometrics techniques. The results revealed that outgoing migration has a significant negative impact on the growth of the region, while migrants' remittances to Africa have a positive & significant impact on growth. The results also revealed that trade contributes positively and significantly to the growth of the continent. The study recommended the introduction of policies that will develop the financial system, to have a stronger positive effect of migrants' remittances on the growth of the region.

Adarkwa (2015) examined the impact of remittances on economic growth in four selected West African countries (Cameroon, Cape Verde, Nigeria, and Senegal) for the period 2000–2010, using an OLS estimation approach. The study found that remittance inflows to Senegal and Nigeria positively affect their GDP, whereas for Cameroon & Cape Verde, remittance inflows negatively affect their GDP. Cameroon recorded the lowest gains from remittances, whereas Nigeria recorded the highest.

Koyame-Marsh (2012) investigated the impact of remittances on the growth of ten ECOWAS countries (Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Mali, Niger, Nigeria, Senegal, and Togo) between 1976 & 2007, using the Ordinary Least Squares (OLS) method of estimation. The results revealed that remittances don't seem to stimulate growth in any of the ten countries. Remittances significantly impacted the real output growth of Benin only.

METHODOLOGY

This study adopts an ex post facto research design. The independent variables are remittances (REM), foreign direct investment (FDI), & trade openness (TR), while the dependent variable is GDP per capita growth (economic growth proxy). The study employed annual secondary data, which were sourced from World Development Indicator (WDI) between 2000 & 2023 for 10 countries in SSA (which includes Nigeria, Ghana, Senegal, Cameroon, the Republic of Congo, Democratic Republic of Congo, Kenya, Uganda, Zimbabwe, and South Africa).

Estimation Technique: Given that our panel data demonstrated cross-sectional dependence based on the cross-sectional dependence test, this study employed Panel Estimated Generalized Least Squares (EGLS) method with cross-section Seemingly Unrelated Regression (SUR) weights. This estimator provides efficient and consistent estimates by correcting for potential correlation of error terms across cross-sectional units (countries) and heteroskedasticity in the data. The use of SUR weights ensures that contemporaneous correlations between countries are accounted for, thereby improving the robustness of the estimated coefficients. Traditional estimators, such as Fixed Effects and Random Effects, assume homoskedasticity and cross-sectional independence, which would lead to inefficient and potentially biased estimates under these conditions. In addressing these issues, this study employed the Panel Estimated Generalized Least Squares (EGLS) with cross-section Seemingly Unrelated Regression (SUR) weights. This technique is specifically designed to account for contemporaneous correlation across cross-sections and heteroskedasticity, thereby producing more efficient and reliable coefficient estimates compared to conventional panel estimators. The Auto-regressive Distributed Lag (ARDL) was employed for country-specific analysis (time series).

Table 3.1: Summary of the source and description of data.

Variable	Symbol	Description of the variables	Source
GDP Per Capita Growth	GDPPCG	GDP per capita growth is measured by the annual % growth rate of GDP per capita.	WB-WDI (2024)
Foreign Direct Investment	FDI	Foreign Direct Investment is measured by net inflows (% of GDP)	WB-WDI (2024)

Trade Openness	TR	Trade Openness is measured by trade as a % of GDP.	WB-WDI (2024)
Remittances	REM	Remittance is measured by remittances received as a % of GDP	WB-WDI (2024)

Source: Authors' computation

Model Specification

In specifying the model for analysing the impact of remittances on economic growth across the chosen countries in SSA, this study adopted and modified the model specification of Abdelbagi (2016), who examined the impact of migration, remittances, & trade openness on economic growth in Africa from 1976 to 2015. The model was adopted because it investigated how remittances impacted the growth of African countries. The model is stated as:

$$\ln Y_{it} + \beta + \alpha_0 \ln Y_{it-1} + \alpha_1 \ln MR_{it} + \alpha_2 \ln RE_{it} + \alpha_3 \ln TR_{it} + U_{it} \quad (1)$$

Where: Y is the proxy for economic growth, Y_{t-1} is the lagged dependent variable, MR is outgoing migration, RE is remittances, TR is trade openness, and U is the error term; $i = \text{country } (i=1, \dots, N)$ and $t = \text{the time period } (t=1, \dots, T)$. β , α_0 , α_1 , α_2 , and α_3 are the slope parameters to be estimated, which are expected to be positive. However, the model was modified to suit the objectives of this study. The modified model used in this research is stated as:

$$GDPPCG_{it} = \alpha_0 + \alpha_1 GDPPCG_{it-1} + \alpha_2 REM_{it} + \alpha_3 TR_{it} + \alpha_4 FDI_{it} + \mu_{it} \quad (2)$$

Where:

GDPPCG is GDP per capita growth, a proxy for economic growth,

GDPPCG_{t-1} is the lagged GDP per capita growth

REM is remittances, measured by Personal remittances collected (% GDP)

TR is trade openness, measured by trade as a % of GDP

FDI is foreign direct investment

and μ is the error term;

$i = \text{the country } (i=1, \dots, N)$ and $t = \text{the time period } (t=1, \dots, t)$. α_0 , α_1 , α_2 , α_3 , and α_4 are the slope parameters to be estimated. α_0 , α_1 , α_2 , α_3 and α_4 are expected to be positive.

GDP per capita growth is the dependent variable (proxy for economic growth).

Pre-Estimation Tests

Cross-Sectional Dependency Test: This is done to determine whether the panel data set is sectionally dependent or not. There are various cross-sectional dependency tests, such as Breusch-Pagan LM, Pesaran scaled LM, and Pesaran CD tests. This study adopted the Breusch-Pagan LM, Pesaran scaled LM, and Pesaran CD tests.

The panel unit root test: This test is used to determine whether variables in a panel dataset are stationary or have a unit root (i.e., are non-stationary). This study employed a second generational unit root test (Bai and Ng – PANIC test), which is ideal when panel series are cross-sectionally dependent.

Panel cointegration test: This is used to ascertain whether a long-run equilibrium relationship exists among the variables. This study employed Pedroni cointegration and Kao cointegration tests.

Causality test: Granger (1969) developed a methodology for analysing the causal relationships between time series. Dumitrescu and Hurlin (2012) provide an extension designed to detect causality in panel data. Given that $x_{i,t}$ and $y_{i,t}$ are the observations of two stationary variables for individual i in period t . Coefficients are allowed to differ across individuals, but are assumed to be time invariant. This study employed the Pairwise Granger Causality test in examining the causality between the dependent variable & the independent variables of interest.

RESULTS AND DISCUSSION

This section presents and discusses the results obtained. The section starts with the preliminary tests and gradually moves to the actual estimated result.

Table 4.1: Summary of Descriptive Statistics

	GDPPCG	REM	FDI	TR
Mean	1.430792	3.074286	2.633802	60.33938
Median	1.810000	2.131104	1.904728	54.13425
Maximum	19.51000	13.61145	34.41826	156.8618
Minimum	-18.65000	0.000000	17.29212	1.650000
Std. Dev.	4.145602	3.307327	4.118085	25.95439
Skewness	-0.867558	1.135458	2.382779	1.235494
Kurtosis	8.953929	3.369999	21.05488	4.588243
Jarque-Bera	384.5990	52.93956	3486.892	86.28293
Probability	0.000000	0.000000	0.000000	0.000000
Observations	240	240	240	240
Source: Authors' computation using EViews 12				

The descriptive statistics of the variables are presented in Table 4.1 above. GDP per capita growth, remittances, FDI, & trade openness during this timeframe exhibited positive mean values of 1.430792, 3.074286, 2.633802, and 60.33938, respectively. The Median value of GDP per capita growth, remittances, FDI, and trade openness are 1.81 (suggesting some negative outliers), 2.13, 1.90, and 54.13, respectively. The maximum and minimum values of GDP per capita growth, remittances, FDI, & trade openness are 19.51 & -18.65 (high volatility and potential economic downturns in some years), 13.61 & 0.00 (some periods had no remittances), 34.42 & 17.29, and 156.86 and 1.65 (showing a very wide range), respectively. The standard deviations of GDP per capita growth, remittances, FDI, and trade openness are 4.15 (significant variability), 3.31 (moderate dispersion), 4.12 (considerable variation), and 25.95 (high variability), respectively. The Skewness values of GDP per capita growth, remittances, FDI, & trade openness are -0.87 (negative skew), 1.135458 (moderately right-skewed), 2.38 (highly right-skewed), and 1.235494 (moderately right-skewed), respectively. The kurtosis values of GDP per capita growth, remittances, FDI, & trade openness are 8.95 (High kurtosis), 3.37 (Closer to normal distribution), 21.05 (extremely high kurtosis), and 4.59 (Closer to normal distribution).

Table 4.2: Matrix of Correlation Coefficients

Variable	GDPPCG	REM	FDI	TR
GDPPCG	1.00			
REM	0.3058	1.00		
FDI	0.1977	-0.0079	1.00	
TR	-0.0679	-0.1709	0.3593	1.00

Source: Authors' computation using EViews 12

Table 4.2 presents the pairwise correlation matrix, investigating the associations among the variables. GDPPCG has a moderate positive correlation (0.3058) with remittances, suggesting that remittances may contribute to growth in SSA. GDPPCG has a weak positive correlation (0.1977) with FDI, indicating a slight positive correlation between foreign investment & growth in SSA. GDPPCG has a very weak negative correlation with trade openness; this relationship is likely not significant

Table 4.3: Residual Cross-Sectional Dependence Test from Panel OLS Estimates

Test	Statistics	Prob.
Breusch-Pagan LM	119.2851	0.0000
Pesaran scaled LM	7.830335	0.0000
Pesaran CD	8.496556	0.0000

Source: Authors' computation using EViews 12

Table 4.3 shows the cross-sectional dependence test results from panel OLS estimates. A growing body of panel-data literature holds that panel data models are likely to display substantial cross-sectional dependence in the errors, which may arise due to strong interdependence among the cross-sectional units (Hoyos & Xarifiids, 2006). The cross-sectional dependence test results presented in Table 4.3 indicate the presence of cross-sectional dependence among the variables, since the probabilities of all test statistics are less than 0.05 at 5% significance level. Hence, a second generational unit root test was employed in determining the stationarity of the series.

Table 4.4: Panel unit root test with cross-sectional dependence: Bai and Ng – PANIC test

Variables	Deterministic	Pooled Statistics	(P-Value)	Stationarity
GDPPCG	Constant	+/-Inf	0.00000	Stationary
REM	Constant	2.63425	0.00843	Stationary
FDI	Constant	2.18761	0.02870	Stationary
TR	Constant and trend	+/-Inf	0.00000	Stationary

Source: Authors' computation using EViews 12

The second generational unit root test (Bai and Ng-PANIC test) is presented in Table 4.4. The result of the test (based on the P-value of the test statistics) shows that variables are stationary at 5% level of significance.

Table 4.5: Pedroni Residual Cointegration Test

Test	Statistics	Prob.
Panel v-Statistic	-1.707876	0.9562
Panel rho-Statistic	-1.369779	0.0854
Panel PP-Statistic	-7.255679	0.0000
Panel ADF-Statistic	-6.687890	0.0000
Panel v-Statistic (weighted)	-1.830759	0.9664
Panel rho-Statistic (weighted)	-1.814175	0.0348
Panel PP-Statistic (weighted)	-6.738020	0.0000
Panel ADF-Statistic (weighted)	-5.044066	0.0000
Group rho-Statistic	-0.837015	0.2013

Group PP-Statistic	-9.182241	0.0000
Group ADF-Statistic	-5.144100	0.0000

Source: Authors' computation using EViews 12

Table 4.6: Kao Residual Cointegration Test

t-Statistics	Prob.
-1.790224	0.0367

Source: Authors' computation using EViews 12

From Tables 4.5 and 4.6 above, the Pedroni test shows that there is cointegration since the majority of the test statistics support the presence of cointegration among the panel variables at 5% level of significance. Also, the Kao test indicates evidence of cointegration at 5% level of significance. Hence, we conclude that the variables in the model are cointegrated.

Table 4.7. Panel Regression Results

Dependent Variable: GDPPCG

Sample: 2000 – 2023

Method: Panel EGLS – Cross-section SUR

Variable	Coefficient	t-statistics	Prob.
REM	0.173168	4.867389	0.0000
TR	-0.005837	-0.931646	0.3525
FDI	0.129556	2.971043	0.0033
GDPPCG (-1)	0.438979	8.535991	0.0000
C	0.611647	1.902573	0.0584
Mean dependent var	0.185837	S.D. dependent var	1.643336
R- Squared	0.479597	Adjusted R- Squared	0.470304
S.E. of regression	0.987405	F-statistic	51.60885
Prob. (F-statistic)	0.000000	D.W. statistic	2.017259

Source: Authors' computation using EViews 12

Table 4.7 is the panel regression results using the Panel EGLS – Cross-section SUR. From Table 4.7, the value of R-squared is 0.4796, which suggests that about 47.96% of the variation in GDP per capita growth is explained by the independent variables. The Adjusted R-squared is 0.4703, which also suggests a moderately good fit model. The F-statistic (51.61) with probability (0.0000) indicates that the model is statistically significant (jointly the variables explain the variation in GDPPCG). The Durbin-Watson statistic (2.02) suggests no serious autocorrelation in the residuals.

The coefficient of remittances (0.1732) is positive and statistically significant (p-value = 0.0000). A unit rise in remittances is associated with a 0.1732 unit increase in GDP per capita growth (economic growth proxy). This

suggests strong evidence that remittances strongly and positively impact growth across the chosen countries in SSA.

The coefficient of trade openness (-0.0058) is negative and statistically insignificant (p-value = 0.3525). A unit increase in trade openness is associated with a 0.0058 unit decrease in GDP per capita growth. This suggests that trade openness doesn't have a meaningful effect on growth across the selected countries.

The coefficient of FDI (0.1296) is positive & statistically significant (p-value = 0.0033). A unit rise in FDI is associated with a 0.1296 unit increase in GDP per capita growth. This suggests that FDI supports growth in the selected countries.

The coefficient of Lag of GDP per capita growth (0.6116) is positive & statistically significant (p-value = 0.0000). A unit increase in Lag of GDP per capita growth is associated with a 0.6116 unit increase in GDP per capita growth. This indicates persistence in economic growth (past growth strongly predicts current growth).

Table 4.8. Pairwise Granger Causality Test

Sample: 2000-2003		Lags: 2	
Null Hypothesis:	Obs	F-Statistics	Prob.
REM does not Granger-Cause GDPPCG	219	3.94816	0.0207
GDPPCG does not Granger-Cause REM		2.80351	0.0628

Source: Authors' computation using EViews 12

The panel Granger causality test results in Table 4.8 above indicate that remittances (REM) Granger-cause GDP per capita growth rate (GDPPCG), while GDP per capita growth rate (GDPPCG) does not Granger-cause remittances (REM) at 5% significance level. Hence, there is unidirectional causality from remittances to growth across the selected countries. The result suggests that past values of remittances help predict changes in growth across the chosen countries. The result supports the idea that remittances are an important driver of growth in the region.

DISCUSSION AND POLICY IMPLICATIONS OF FINDINGS

This research investigated the relationship between remittances and economic growth in selected countries in Sub-Saharan Africa (SSA) between 2000 and 2023. The results showed that remittances had a positive & statistically significant impact on GDP per capita growth during the study period, which agrees with a priori expectations. This implies that remittances are a vital and reliable contributor to economic growth in the region. With intentional and good remittance policies, countries in SSA can move from being survival countries to achieving long-term economic growth. The region can leverage remittances as a tool for economic growth. Governments in SSA should view remittances not just as household income, but as a developmental resource.

This finding is consistent with previous studies; for instance, Baafi and Asiedu (2025) found a significant impact of remittances on economic growth in Sub-Saharan Africa. Also, Delessa et al. (2024) found a positive relationship between remittances and growth in Sub-Saharan Africa. In the same vein, Ikpesu (2023) found that migrant remittances positively influence and facilitate growth in Sub-Saharan Africa. Likewise, Olayungbo and Quadri (2019) found that remittances positively impact the growth of Sub-Saharan African nations both in the short & long run. However, some previous studies disagree with this result, such as Kadozi (2019), who found no significant influence of remittances on the growth of Sub-Saharan Africa.

Further findings showed that FDI positively & significantly impacts GDP per capita growth during the study period, which is in line with a priori expectations. This result agrees with a priori expectations and findings of Owamah and Mgbomene (2025), as they found that FDI positively and significantly impacts Nigeria's growth in the long run. This result implies that FDI complements remittances in promoting economic growth

significantly in the region. Hence, both remittances & FDI can jointly foster growth in SSA. Additionally, trade openness negatively but insignificantly impacts GDP per capita growth during the study period, which is not in line with a priori expectations. This implies that trade openness has not directly boosted growth in the region, emphasizing the need for nations in the region to re-evaluate their trade policies. Trade openness may not have significantly boosted the growth of countries in SSA due to several interrelated reasons, such as structural, institutional, and external constraints.

The result also revealed a unidirectional causality from remittances to economic growth, supporting the idea that remittances are an important driver of growth in the region. However, this finding disagrees with that of Olayungbo & Quadri (2019), as they found a unidirectional causal relationship from growth to remittances in Sub-Saharan Africa.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The relationship between remittance inflows and the growth of developing nations is a topic that has been extensively debated among researchers. This becomes particularly compelling when focusing on Sub-Saharan African nations characterized by low economic performance. This study investigated the relationship between remittances & economic growth in selected countries in Sub-Saharan Africa (SSA) between 2000 & 2023. The results indicated that remittances positively & significantly impact growth across the selected countries during the study period. The result also revealed a unidirectional causality from remittances to growth across the selected countries, supporting the idea that remittances are an important driver of economic growth in the region. Hence, this study concludes that remittances play a critical role in fostering economic growth in Sub-Saharan Africa.

Recommendations

Drawing from the results, this research made the following recommendations:

1. Governments in Sub-Saharan Africa should encourage diaspora engagement and create policies that reduce the cost of remittance transfers, e.g., improving mobile banking and reducing intermediary fees.
2. Remittances should be channelled into productive use in order to produce a greater positive effect on growth in the region. For this to happen, governments in SSA should encourage diaspora investment funds and provide financial literacy programs to help households invest remittance income more effectively.
3. Since FDI complements remittances in fostering growth, governments in the region should create synergistic policies that attract FDI into sectors where remittance inflows are high (e.g., housing, retail, agribusiness), to magnify economic growth impacts.
4. Since trade openness insignificantly impacts growth across the selected countries, Sub-Saharan African nations may need to reassess trade policies, focusing on value-added exports and infrastructure for regional trade, rather than just increasing trade volumes.

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