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Diaspora Remittances and Economic Development in Nigeria

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Abstract

This study aims to examine the significant impact of diaspora remittances on Nigeria's economic development, specifically focusing on GDP growth, per capita income, and human capital development. By exploring the relationship between remittances and key economic indicators, the study seeks to provide empirical evidence on the role of remittances in driving long-term economic growth and enhancing socio-economic welfare in Nigeria. The study employs an Autoregressive Distributed Lag (ARDL) model to analyze the relationship between diaspora remittances and Nigeria's economic development. The model is tested using secondary data from credible sources, including the Central Bank of Nigeria and World Bank, spanning the period from 1985 to 2023. The research involves both long-run and short-run analysis, with a focus on error correction modeling. The findings reveal a significant positive relationship between remittances and Nigeria's GDP growth, per capita income, and human capital development. Remittances are shown to stimulate economic growth, reduce poverty, and improve education and healthcare outcomes, reinforcing the positive multiplier effect on the Nigerian economy. This study contributes to the understanding of how remittances can be harnessed for economic growth and development. The results suggest that policies promoting the productive use of remittances in sectors like education, healthcare, and small businesses can boost Nigeria's long-term economic stability.

Originality/ Value: *This study provides original insights into the role of diaspora remittances in Nigeria's economic growth, offering valuable recommendations for leveraging remittance inflows for sustainable development.*

Keywords: *diaspora remittances, GDP growth, per capita income, human capital development, Nigeria.*

1. Introduction

Diaspora remittances are increasingly recognized as a critical component of economic development in many developing countries, including Nigeria. Remittances serve as a stable and significant source of external finance, often exceeding official development assistance and rivaling foreign direct investment in volume (Ratha, et al., 2021; Ikwuagwu, et al., 2024). The Central Bank of Nigeria (CBN) reported a historic increase in remittance inflows, reaching $553 million in July 2024 a 130% rise from the same period in the previous year. This surge highlights the growing importance of remittances in Nigeria's economic framework, particularly as a tool for enhancing foreign exchange liquidity and stabilizing the local currency (CBN, 2024).

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Beyond financial statistics, remittances have profound socio-economic implications for recipient countries like Nigeria (Eke & Eke, 2024). They provide essential support to households, enabling them to improve living standards, invest in education, healthcare, and small businesses, and reduce their vulnerability to economic shocks (Ibenyenwa, et al, 2023). The inflow of remittances often acts as a safety net for families, mitigating the adverse effects of unemployment and underemployment, which are prevalent in many developing economies. In Nigeria, these funds have not only contributed to poverty reduction but also bolstered consumption and economic activity, which are critical for growth (Adekunle, 2024; Muhammad, Özdeşer et al, 2024). Remittances, therefore, play a dual role: they are both a financial inflow and a development tool that supports broader socio-economic goals.

A substantial body of research has established the positive impact of diaspora remittances on Nigeria's economic growth and development. Empirical studies using data from the Central Bank of Nigeria and the World Bank consistently find that remittances significantly increase per capita income and GDP, serving as the second-largest source of foreign exchange after oil exports (Nwachukwu, 2025; Nwodo, et al., 2025); Mgbomene, 2024). For example, Nwachukwu (2025) demonstrated that both workers' and migrant remittances have a significant positive effect on the growth of Nigeria's agricultural, industrial, and services sectors. Similarly, studies by Nangih and Nwineewii (2024) and Adeagbo (2024) confirm that remittances enhance human capital development and improve the Human Development Index (HDI) by enabling greater access to education and healthcare. Other research highlights the role of remittances in poverty reduction, job creation, and entrepreneurial activity, with up to 87.5% of remittance flows reportedly invested in construction and home purchase (Ostrowski & Malikov, 2025; Igbinedion & Matthew, 2023). Despite these benefits, challenges persist, including the prevalence of informal remittance channels, regulatory bottlenecks, and the negative effects of brain drain, particularly in critical sectors such as health and education (Ojeyinka & Ibukun, 2024; Emmanuel, et al., 2024).

The novelty of this study lies in its integrated and up-to-date analysis of diaspora remittances, drawing on the most recent data and sectoral trends through 2024. Unlike earlier works that often focused on aggregate impacts or single sectors, this research adopts a multidimensional approach, examining how remittances interact with Nigeria's financial system, regulatory environment, and

socio-economic structures. It also addresses the absorptive capacity of the financial sector to mobilize remittances for sustainable economic development and investigates the qualitative dimensions of diaspora engagement, such as knowledge transfer and targeted investments in infrastructure and human capital. By incorporating recent fluctuations in remittance flows, exchange rate volatility, and policy reforms, the study provides a nuanced understanding of the mechanisms through which remittances drive economic growth and the constraints that limit their developmental impact.

The purpose of this study is to critically examine the impact of diaspora remittances on Nigeria's economic development, with particular emphasis on their contributions to GDP growth, poverty alleviation, human capital formation, and sectoral output. The research aims to assess how remittance inflows are utilized by recipient households and the broader economy, evaluate the effectiveness of financial and regulatory frameworks, and identify policy measures to enhance the developmental outcomes of remittances. Furthermore, the study explores the socio-economic consequences of migration and remittance patterns, including the challenges posed by informal channels and brain drain. Ultimately, this research seeks to offer evidence-based recommendations for policymakers, financial institutions, and diaspora communities to maximize the developmental benefits of remittances and foster sustainable economic growth in Nigeria.

1.2 Research Problem

The role of diaspora remittances in Nigeria's economic development is a subject of growing importance, as these remittances serve as a significant contributor to the country's financial inflows. While substantial evidence suggests that remittances have a positive impact on Nigeria's economic growth, the full extent and complexity of this relationship are not completely understood. Several empirical studies have highlighted that remittances are a major source of foreign exchange, ranking second only to oil exports in contributing to Nigeria's national income (Nwachukwu, 2025; Nwodo et al., 2025). These funds have been shown to boost per capita income and increase the country's GDP (Mgbomene, 2024). Additionally, remittances have been associated with improvements in Nigeria's agricultural, industrial, and service sectors, facilitating economic diversification and resilience.

However, despite the positive impact of remittances on the country's growth, several challenges undermine their potential to fully contribute to long-term development. Informal remittance channels remain prevalent, circumventing official banking systems and reducing the effectiveness of remittance policies. Additionally, regulatory challenges, including excessive fees and bureaucratic delays, often impede the efficient flow of funds. Furthermore, while remittances contribute to poverty reduction and job creation, the issue of brain drain continues to persist, especially in critical sectors such as healthcare and education, which may undermine the country's human capital development (Ojeyinka & Ibukun, 2024; Emmanuel et al., 2024). The interplay of these factors calls for a comprehensive analysis of the influence of diaspora remittances on Nigeria's economic development, considering both the positive outcomes and the accompanying challenges.

1.3 Research Objectives

a) To assess the significant influence of diaspora remittances on Nigeria's GDP growth rate.
b) To evaluate the positive effect of diaspora remittances on per capita income in Nigeria.
c) To examine the significant impact of diaspora remittances on human capital development in Nigeria.

2. Hypotheses Development

2.1 Diaspora Remittances and Nigeria's GDP Growth Rate

The relationship between diaspora remittances and Nigeria's GDP growth rate can be effectively explained using the endogenous growth theory. This theory posits that long-term economic growth is primarily driven by internal factors such as human capital development, innovation, and domestic investment. In the context of developing economies like Nigeria, diaspora remittances act as a significant internal source of capital, supplementing domestic savings and fostering investment in productive sectors. According to endogenous growth theory, when remittances are directed toward education, healthcare, infrastructure, and small business development, they enhance human capital and stimulate economic activity, thereby promoting sustained GDP growth (Owotemu, 2024).

Recent empirical studies provide robust evidence supporting a positive and significant relationship between diaspora remittances and Nigeria's GDP growth. For example, Nangih and Bail (2024) found that diaspora remittances have a significant positive effect on both per capita income and gross domestic product in Nigeria, concluding that remittances are a major contributor to the country's economic development. Their regression analysis revealed that increases in remittance inflows are closely associated with improvements in GDP, confirming the theoretical expectation that remittances, when properly channeled, bolster economic growth. Similarly, Salahedeen and Ismaeel (2025) demonstrated through econometric analysis that remittances from workers abroad are a crucial driver of economic growth in Nigeria, contributing to household income, poverty reduction, investment, entrepreneurship, and employment. Furthermore, Owotemu, et al. (2024) reported that a 1% increase in diaspora remittance leads to a 2.33% increase in GDP, highlighting the substantial multiplier effect of remittance inflows on the Nigerian economy.

Despite these positive findings, the literature also acknowledges that the developmental impact of remittances depends on how they are utilized. If remittances are primarily used for consumption rather than investment, their effect on long-term growth may be limited. However, in Nigeria, empirical evidence indicates that a significant portion of remittances is invested in construction, home purchase, and small businesses, all of which contribute to economic expansion (Owotemu, et al., 2024; Nangih & Bail, 2024).

In light of these theoretical and empirical perspectives, the following hypothesis is proposed:
H_1: Diaspora remittances significantly influence Nigeria's GDP growth rate.

2.2 Diaspora Remittances and Per Capita Income in Nigeria

The nexus between diaspora remittances and per capita income in Nigeria is well-articulated within the frameworks of the push-pull theory of migration and the theory of tempered altruism. The push-pull theory suggests that economic disparities and opportunities drive migration, with remittances serving as a financial bridge that enhances the welfare of families left behind (Al-Jabieri, et al., 2025). The theory of tempered altruism posits that remittances are motivated by both altruistic and self-interested reasons, as migrants support relatives while also investing in their home communities for potential future benefits (Mahmud, 2020). Recent empirical research

provides substantial evidence of a positive and significant relationship between diaspora remittances and per capita income in Nigeria. For example, Adebayo (2024) found that remittances are a major source of external finance, directly contributing to improvements in household income and living standards. Rotimi et al., (2023), using ARDL bounds testing, established that remittance inflows have both short- and long-term positive effects on per capita income, helping to fill fiscal deficits and stimulate economic growth. In a related study, the Eke and Eke, (2024) reported that a 100% increase in workers' remittances leads to a 2.92% rise in GDP per capita, highlighting the multiplier effect of remittances on individual prosperity.

Furthermore, research by Salahedeen and Ismaeel (2025) underscores that remittances are often invested in productive ventures such as education, healthcare, and small businesses, which in turn promote income stability and poverty reduction. These investments not only improve the immediate purchasing power of recipient households but also foster long-term socio-economic development.

Based on these theoretical perspectives and empirical findings, the following hypothesis is proposed:

H_2: Diaspora remittances have a significant positive effect on per capita income in Nigeria**.**

2.3 Diaspora Remittances and Human Capital Development in Nigeria

The relationship between diaspora remittances and human capital development in Nigeria is underpinned by the pure altruism theory, which posits that migrants remit funds primarily to improve the welfare and future prospects of their families and communities at home (Nangih & Nwineewii, 2024). This theoretical perspective suggests that remittances are often allocated toward investments in education, healthcare, and skill acquisition, all of which are critical components of human capital development.

Empirical studies provide robust evidence supporting a positive and significant effect of diaspora remittances on human capital development in Nigeria. For instance, Adeagbo (2024) found that remittances have a direct and substantial impact on the quality of domestic human capital, with data analysis revealing that increased remittance inflows are associated with improvements in

education and health outcomes. Similarly, Omoniyi and Owoeye (2025) employed an autoregressive distributive lag (ARDL) model and concluded that remittance inflows significantly enhance human capital development, emphasizing the need for policies that facilitate formal remittance channels.

Further, Kudaisi (2023) highlighted that the combined effect of migration and remittances has a significant positive relationship with human development indicators in Nigeria, reinforcing the argument that remittances play a transformative role in building a skilled and healthy workforce. Complementing these findings, Orekoya (2023) demonstrated that diaspora remittances contribute to improvements in both health and education, thereby fostering long-term socio-economic development.

Given these theoretical and empirical insights, the following hypothesis is proposed:
H_3: Diaspora remittances have a significant positive effect on human capital development in Nigeria.

2.4 Conceptual Framework

2.4.1 Diaspora Remittances and Economic Growth in Nigeria

Diaspora remittances play a pivotal role in Nigeria's economic growth by providing a significant source of foreign exchange, second only to oil exports. These remittances contribute directly to the country's GDP growth by increasing consumption, boosting aggregate demand, and facilitating investments in various sectors of the economy (Nwachukwu, 2025). Studies have shown that the inflow of remittances significantly enhances economic activities, particularly in agricultural, industrial, and service sectors, through both consumption and investment (Nwodo, Omeje, & Okereke, 2025). Remittances contribute to increasing the purchasing power of households, thus supporting the demand for goods and services, which directly influences Nigeria's economic performance. Furthermore, these inflows can help stabilize the currency by supplementing foreign exchange reserves and mitigating external shocks caused by fluctuations in oil prices.

However, the extent to which remittances can fuel sustainable long-term economic growth is influenced by several structural factors. Informal remittance channels, such as unregistered money

transfer systems, limit the effectiveness of official monetary policy and hinder the optimal utilization of funds for development (Emmanuel, Adebayo, & Daniel, 2024). Additionally, high transaction costs and regulatory inefficiencies within the financial system can reduce the potential benefits of remittances, thereby undermining their ability to positively influence Nigeria's economic growth. While the current contributions of remittances to GDP growth are significant, there remains a need for regulatory reforms and policy measures to enhance the formalization of remittance flows, reduce transaction costs, and ensure that these funds are used in ways that maximize their developmental potential (Ikwuagwu, Onyele, & Onyele, 2024).

2.4.2 Diaspora Remittances and Per Capita Income

Per capita income is a critical measure of economic development, and diaspora remittances have a direct impact on its increase in Nigeria. Remittances serve as a crucial source of household income for millions of Nigerians, particularly in rural areas, where access to formal employment opportunities is limited (Ibenyenwa et al., 2023). As households receive remittances, they experience an immediate increase in disposable income, which allows them to improve their standards of living, access better healthcare and education, and invest in assets such as housing and business ventures (Adeagbo, 2024). Studies have indicated that the increase in disposable income, fueled by remittance inflows, has a positive effect on per capita income, enhancing the economic capacity of individuals and contributing to national economic development (Ostrowski & Malikov, 2025).

Nevertheless, while the inflow of remittances has contributed to raising per capita income, the overall impact is constrained by the unequal distribution of remittance receipts across different regions of Nigeria. The vast disparity in the allocation of remittances between urban and rural areas, as well as among different socioeconomic groups, has meant that not all Nigerians benefit equally from these financial transfers (Adebayo, 2024). Additionally, remittances primarily directed towards consumption rather than investment may limit their long-term impact on improving sustainable income levels in the country. To enhance the positive effects of remittances on per capita income, Nigeria must promote policies that encourage the productive use of these funds in areas such as entrepreneurship, infrastructure development, and human capital investment (Muhammad, Özdeşer, & Adedeji, 2024).

2.4.3 Diaspora Remittances and Human Capital Development

Human capital development in Nigeria has been significantly impacted by diaspora remittances, as these funds are often used to finance education and healthcare, both of which are essential for the growth of a skilled and healthy workforce. Remittances contribute to enhancing human capital by providing individuals with the financial means to access better education and healthcare services, thus improving the nation's Human Development Index (HDI) (Nangih & Nwineewii, 2024). Studies show that remittances have enabled many Nigerian families to invest in higher education and vocational training for their children, thus contributing to long-term skill development and improved labor force participation. Additionally, remittances provide resources for improved healthcare access, reducing the economic burden of healthcare costs on households and improving overall health outcomes (Adeagbo, 2024).

However, the impact of remittances on human capital development is not without its challenges. While remittances can facilitate access to education and healthcare, the brain drain phenomenon—where highly skilled Nigerians immigrate to other countries for better opportunities—remains a significant issue (Al-Jabieri, Robina Ramírez, & Castellano-Álvarez, 2025). This migration of skilled professionals in sectors such as healthcare, education, and technology may negate the positive impact that remittances have on human capital development. Furthermore, remittances are often not systematically directed towards capacity-building initiatives that would create sustainable, long-term improvements in human capital. Policymakers need to consider initiatives that encourage the retention of skilled workers and promote the productive use of remittances for human capital development to address this imbalance (Kudaisi, 2023; Nangih & Bail, 2024).

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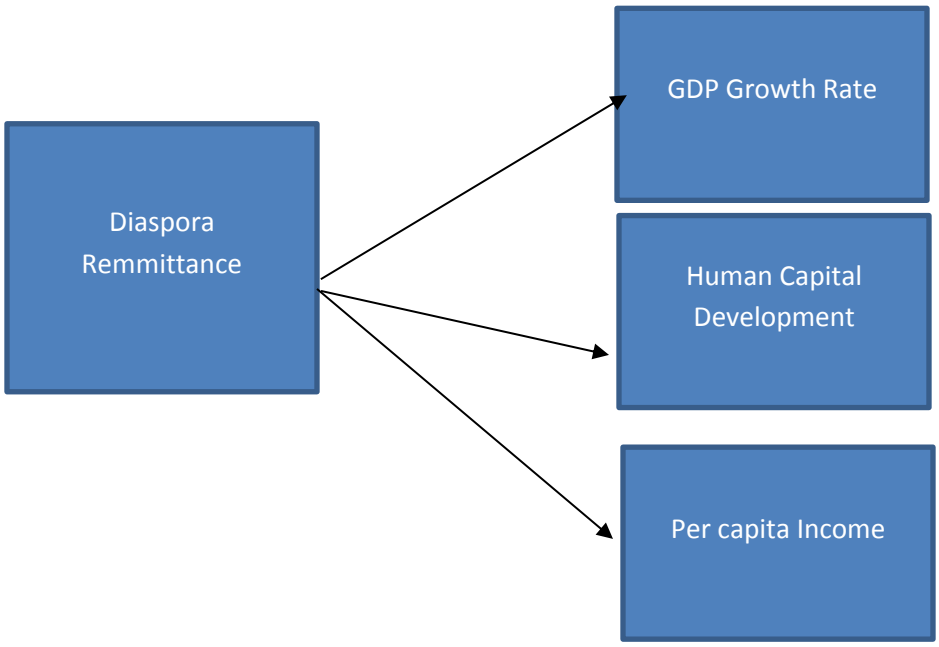

3. Methodology

3.1 Research Type

The study adopted an **ex post facto** research design, which was deemed appropriate for examining cause-and-effect relationships where the variables had already occurred. This design is commonly used in macroeconomic studies where manipulation of the variables is not feasible. The ex post facto design was selected to assess the impact of remittances on economic development in Nigeria over time, relying on historical data.

3.2 Research Locations

The study focused on Nigeria as the primary location, analyzing national-level data concerning remittances and economic development indicators.

3.3 Data Sources

Secondary data were sourced from two primary institutions. The first source was the Central Bank of Nigeria (CBN) Statistical Bulletin, and the second was the World Development Indicators (WDI) from the World Bank. These sources were chosen due to their reliability, consistency, and widespread recognition as credible and accurate for economic research.

3.4 Data Collection

Data for the study were collected for the period from 1985 to 2023. This time frame encompassed significant economic reforms in Nigeria, including the Structural Adjustment Program (SAP), and it allowed for the study to capture the effects of remittances both in the pre- and post-liberalization eras. The data were retrieved from the aforementioned sources, ensuring that the study was based on credible, publicly available statistical information.

3.5 Data Analysis

The collected data underwent both descriptive and inferential statistical analysis. Descriptive statistics were calculated to summarize the dataset, including measures of central tendency, such as the mean, median, and mode, as well as measures of dispersion like standard deviation and variance. These initial statistics provided a preliminary understanding of the data distribution and helped identify patterns or anomalies.

For inferential analysis, several steps were followed. The first step involved conducting a Unit Root Test using the Augmented Dickey-Fuller (ADF) test to assess the stationarity of the data series. The ADF test was employed to ensure the variables did not exhibit non-stationarity, which could lead to unreliable regression results. Following this, a Cointegration Test using the Johansen method was carried out to determine whether a long-term equilibrium relationship existed among the variables. This was crucial for ensuring that the variables were related in a way that allowed for a meaningful analysis of both short-term and long-term dynamics.

Once cointegration was established, an Error Correction Model (ECM**)** was employed to estimate both the short-term dynamics and long-term equilibrium relationships between remittances and economic development indicators. The ECM allowed for the examination of how quickly the effects of remittances and other variables returned to equilibrium after any short-term deviations. The data analysis was carried out using EViews, which are commonly used for time series econometric modeling.

3.5.1 Model Specification

Based on the research objectives, the study employed the following model to examine the relationship between remittances and Nigeria's economic development. The model was adapted from previous studies by Giuliano and Ruiz-Arranz (2009) and Aggarwal et al. (2011), who successfully used similar specifications in analyzing the impact of remittances on economic development.

The model specification is as follows:

Economic Development=β0+β1Remittances+β2Money Supply+β3Exchange Rate+β4 Inflation Rate+ϵ

$GDPR_t=\beta_0+\beta_1REM_t+\beta_2MS_t+\beta_3EXR_t+\beta_4IFR_t+\epsilon_t$……..equ 1

$HCI_t=\beta_0+\beta_1REM_t+\beta_2MS_t+\beta_3EXR_t+\beta_4IFR_t+\epsilon_t$ ……..equ 2

$PCI_t=\beta_0+\beta_1REM_t+\beta_2MS_t+\beta_3EXR_t+\beta_4IFR_t+\epsilon_t$ ……..equ 3

Where:

Economic Development is proxied by GDP growth rate, human capital development, and per capita income.

GDPR_t is the GDP growth rate in time **t**,

PCIR_t is the per capita income growth rate in time **t**,

HCI_t is the human capital index in time **t**,

REM_t is the remittance inflows in time **t**,

MS_t is the money supply in time **t**,

EXR_t is the exchange rate in time **t**,

IFR_t is the inflation rate in time **t**,

ϵ represents the error term.

Table 1: Variables and Measurement:

Variable	Description	Measurement	Source
Economic Development	Overall economic progress and welfare.	GDP growth rate (%), Human Capital Index, Per Capita Income (USD)	Giuliano & Ruiz-Arranz (2009), Aggarwal et al. (2011)
Remittances	Financial transfers from the diaspora to Nigeria.	Total annual remittances (USD millions)	World Bank (WDI), CBN Statistical Bulletin
Money Supply (M2)	Total money supply in the economy.	M2 (Naira, billions)	CBN Statistical Bulletin
Exchange Rate	Value of the Nigerian Naira relative to foreign currencies.	Naira/USD exchange rate	CBN Statistical Bulletin
Inflation Rate	Rate of increase in the general price level.	Consumer Price Index (CPI) change (%)	CBN Statistical Bulletin, World Bank (WDI)

4. Result and Discussion

4.1 Descriptive Statistics

The descriptive statistics reveal significant variation across variables. Remittances (REMB) displayed high variability with a mean of 2444.85 and large outliers, showing positive skewness (1.541) and heavy tails (kurtosis 5.225). Human Capital Index (HCI) had a mean of 0.418 with a low standard deviation (0.121), indicating uniformity. GDP Growth Rate (GDPR) and Per Capita Income Growth Rate (PCIR) showed moderate variability. Money Supply (MSB) and Exchange Rate (EXR) had high ranges, with MSB showing extreme values. Inflation Rate (IFR) had a mean of 19.253 with moderate variability. The Jarque-Bera test suggests non-normality, but deviations aren't statistically significant.

Table 2: Summary of Descriptive Statistics

	REMB	HCI	GDPR	PCIR	MSB	EXR	IFR
Mean	2444.846	0.418	4.174	1.503	11951.510	141.914	19.253
Median	302.019	0.365	4.196	1.404	2131.169	125.808	12.877
Maximum	13937.950	0.768	15.329	12.276	55840.380	679.900	72.836
Minimum	0.007	0.316	-2.035	-4.507	23.153	0.894	5.388
Std. Dev.	3269.844	0.121	3.768	3.610	16135.390	146.988	16.999
Skewness	1.541	1.566	0.515	0.524	1.295	1.601	1.792
Kurtosis	5.225	4.281	3.577	3.674	3.568	5.977	5.022
Jarque-Bera	3.491	1.596	2.263	2.523	1.431	3.055	2.521
Prob	0.208	0.192	0.323	0.283	0.330	0.316	0.231
Obs	39	39	39	39	39	39	39

4.2 Unit Root Test

The Augmented Dickey-Fuller (ADF) unit root test results indicate stationarity at different levels for the variables. At the 5% significance level, all variables except Money Supply (MS) are non-stationary at levels, with p-values greater than 0.05. However, all variables become stationary at the first difference, with p-values less than 0.05, suggesting they are integrated of order one, I(1). Money Supply (MS), on the other hand, is stationary at levels (I(0)), with a p-value of 0.002, indicating no need for differencing.

Table 3: Augmented Dickey-Fuller Unit root Stationarity Test

Variables	Test at Levels @5%			Test at 1st difference@5%			Inference
	ADF statistic	t-statistic	Prob.*	ADF statistic	t-statistic	Prob.*	
HCI	-1.969	-2.968	0.298	-6.750	-2.934	0.000	I(1)
PCIR	-1.940	-2.941	0.311	-4.499	-2.943	0.000	I(1)
GDPR	-2.382	-2.941	0.153	-4.178	-2.943	0.002	I(1)
REM	-1.342	-2.941	0.600	-5.322	-2.943	0.000	I(1)
MS	-3.774	-2.941	0.002	-6.674	-2.943	0.000	I(0)
IFR	-3.701	-2.941	0.186	-5.356	-2.943	0.000	I(1)
EXR	-3.795	-2.941	0.816	-5.846	-2.943	0.000	,I(1)

4.3 Co-integration Test

The Bounds Test results indicate that all three models GDPR, PCIR, and HCI show strong evidence of a long-run relationship. The F-statistics for GDPR and PCIR are both 3.46, which exceed the 5% upper bound critical value (3.21), suggesting a long-run relationship at the 5% significance level. The F-statistic for HCI is 7.91, significantly higher than the critical values, indicating a robust long-run relationship. Therefore, based on the Bounds Test, we reject the null hypothesis of no relationship for all three models.

Table 4: Bounds Test Results

Model	F-statistic	5% Critical Value (I(0))	5% Critical Value (I(1))
GDPR	3.46	2.17	3.21
PCIR	3.46	2.17	3.21
HCI	7.91	2.17	3.21

Source: Author's Computation using EView 10 (2025)

4.4 Autoregressive Distributed Lag (ARDL)

Model 1:

$GDPR_t=\beta_0+\beta_1REM_t+\beta_2MS_t+\beta_5EXR_t+\beta_6IFR_t+\epsilon t$

The ARDL Error Correction Regression results for Model 1, which examines the impact of Remittances (REM), Money Supply (MS), Exchange Rate (EXR), and Inflation Rate (IFR) on GDP Growth Rate (GDPR), provide significant insights into both the long-run and short-run relationships. In the long-run equation, the coefficient of LREM (Remittances) is positive (5.213), indicating that an increase in remittances leads to higher GDP growth, with a significant p-value of 0.008. LMS (Money Supply) has a negative coefficient (-10.440), suggesting that higher money supply decreases GDP growth in the long run, with a p-value of 0.007. LEXR (Exchange Rate) positively influences GDP growth, and IFR (Inflation Rate) has a negative effect on GDP growth, both with statistically significant p-values. The short-run equation shows that D(LREM) and D(LMS) have negative coefficients, implying that increases in remittances and money supply in the short term reduce GDP growth. The ECM(-1) term has a negative and significant coefficient (-0.891), indicating a strong and quick adjustment to long-run equilibrium, the model exhibits good explanatory power, with an R-squared of 0.807, and the Durbin-Watson statistic of 2.758 suggests no serious autocorrelation issues.

Table 5: ARDL Error Correction Regression for Model 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Long-Run Equation				
C	-13.547	18.511	-0.732	0.472
LREM	5.213	1.911	2.728	0.008
LMS	-10.440	3.587	-2.910	0.007
LEXR	10.636	4.672	2.276	0.026
IFR	-0.109	0.035	-3.109	0.005
Short-Run Equation (ECM Regression)				
D(GDPR(-1))	-0.202	0.108	-1.872	0.075
D(LREM)	-5.477	1.362	-4.022	0.001
D(LREM(-1))	-2.998	1.367	-2.193	0.040
D(LMS)	-19.162	6.073	-3.155	0.005
D(LEXR)	-9.966	3.836	-2.598	0.017
D(ITR)	0.433	0.123	3.518	0.002
ECM(-1)*	-0.891	0.136	-6.559	0.000
Model Diagnostics				
R-squared	0.807			
Adjusted R-squared	0.768			
Durbin-Watson stat	2.758			

Model 2:

$PCIR_t=\beta_0+\beta_1REM_t+\beta_2MS_t+\beta_3EXR_t+\beta_4IFR_t+\epsilon t$

The ARDL Error Correction Regression results for Model 2, which explores the relationship between Per Capita Income Growth Rate (PCIR) and factors like Remittances (REM), Money Supply (MS), Exchange Rate (EXR), and Inflation Rate (IFR), reveal both short- and long-term dynamics. In the long-run equation, LREM (Remittances) has a positive and significant coefficient (4.222), indicating that higher remittances contribute positively to per capita income growth, with a p-value of 0.027. Conversely, LMS (Money Supply) has a negative effect (-7.486), suggesting that an increase in money supply reduces per capita income growth in the long run, with a p-value of 0.028. IFR (Inflation Rate) also negatively affects per capita income growth, with a significant p-value of 0.006. LEXR (Exchange Rate) has an insignificant impact on PCIR, with a p-value of 0.193. In the short-run equation, D(LREM) and D(LMS) both exhibit negative coefficients, suggesting that short-term increases in remittances and money supply reduce per capita income growth. The ECM(-1) term is significantly negative (-0.898), indicating a fast adjustment to long-run equilibrium. The model has a strong explanatory power, with an R-squared of 0.808, and the Durbin-Watson statistic of 2.746 shows no autocorrelation issues.

Table 6: ARDL Error Correction Regression for Model 2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Long-Run Equation				
C	-14.039	17.884	-0.785	0.441
LREM	4.222	1.842	2.292	0.027
LMS	-7.486	3.448	-2.171	0.028
LEXR	6.047	4.493	1.346	0.193
IFR	-0.105	0.034	-3.095	0.006
Short-Run Equation (ECM Regression)				
D(PCIR(-1))	-0.200	0.108	-1.848	0.079
D(LREM)	-5.277	1.322	-3.991	0.001
D(LREM(-1))	-2.842	1.321	-2.152	0.043
D(LMS)	-18.257	5.872	-3.109	0.005
D(LEXR)	-9.397	3.708	-2.534	0.019
ECM(-1)*	-0.898	0.137	-6.558	0.000
Model Diagnostics				
R-squared	0.808			
Adjusted R-squared	0.769			
Durbin-Watson stat	2.746			

Model 3:

$HCI_t=\beta_0+\beta_1REM_t+\beta_2MS_t+\beta_3EXR_t+\beta_4IFR_t+\epsilon t$

The ARDL Error Correction Regression results for Model 3, which examines the relationship between Human Capital Index (HCI) and variables like Remittances (REM), Money Supply (MS), Exchange Rate (EXR), and Inflation Rate (IFR), provide insights into both the long-run and short-run dynamics. In the long-run equation, LREM (Remittances), LMS (Money Supply), LEXR (Exchange Rate), and IFR (Inflation Rate) all have positive and statistically significant effects on HCI, with p-values less than 0.05. Specifically, LREM (0.166), LMS (0.387), LEXR (0.270), and IFR (0.043) suggest that increases in these variables contribute positively to human capital development in the long run. In the short-run equation, D(LMS(-1)) has a significant negative effect on HCI, while D(IFR) has a positive effect. The ECM(-1) term is significant and negative (-0.202), indicating a strong and rapid adjustment to long-run equilibrium. The model demonstrates a moderate explanatory power, with an R-squared of 0.757 and an Adjusted R-squared of 0.725, suggesting that the model fits the data well. The Durbin-Watson statistic of 2.335 indicates no issues with autocorrelation

Table 7: ARDL Error Correction Regression for Model 3

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Long-Run Equation				
C	0.937	0.634	1.477	0.153
LREM	0.166	0.071	2.350	0.020
LMS	0.387	0.157	2.469	0.016
LEXR	0.270	0.130	2.069	0.040
IFR	0.043	0.022	2.006	0.045
Short-Run Equation (ECM Regression)				
D(HCI(-1))	-0.951	0.111	-8.552	0.000
D(LMS)	0.001	0.047	0.020	0.984
D(LMS(-1))	-0.143	0.051	-2.798	0.010
D(IFR)	0.001	0.000	3.048	0.006
ECM(-1)*	-0.202	0.021	-9.796	0.000
Model Diagnostics				
R-squared	0.757			
Adjusted R-squared	0.725			
Durbin-Watson stat	2.335			

4.5 Diagnostic Test

The results of the Heteroskedasticity Test: Breusch-Pagan-Godfrey for Models 1, 2, and 3 indicate no evidence of heteroskedasticity in the residuals across all models. For Model 1, the F-statistic is

0.8405 with a p-value of 0.6577, and the Obs*R-squared statistic is 25.4989 with a p-value of 0.4909. The Scaled Explained SS has a p-value of 1.0000. These results suggest that the residuals are homoskedastic, as the p-values are well above the conventional 0.05 threshold, indicating constant variance of the error terms. Similarly, for Model 2, the F-statistic is 0.9510 with a p-value of 0.5638, and the Obs*R-squared statistic is 24.2922 with a p-value of 0.4450. The Scaled Explained SS also has a p-value of 1.0000, confirming homoskedasticity. In Model 3, the F-statistic is 0.7296 with a p-value of 0.7512, and the Obs*R-squared statistic is 22.1098 with a p-value of 0.5727. The Scaled Explained SS has a p-value of 1.0000, again indicating no heteroskedasticity. The results across all models confirm that the assumption of homoskedasticity holds, ensuring reliable inference from the regression models.

Table 8 Heteroskedasticity Test: Breusch-Pagan-Godfrey for Models 1, 2, and 3

Model	F-statistic	Prob. F	Obs*R-squared	Prob. Chi-Square	Scaled Explained SS	Prob. Chi-Square
Model 1	0.8405	0.6577	25.4989	0.4909	1.7189	1.0000
Model 2	0.9510	0.5638	24.2922	0.4450	2.4962	1.0000
Model 3	0.7296	0.7512	22.1098	0.5727	2.0734	1.0000

Source: Author's Computation using EView 10 (2025)

4.6 Discussion of Findings

Hypothesis 1: Diaspora remittances significantly influence Nigeria's GDP growth rate.

The findings from Model 1 support this hypothesis, demonstrating that diaspora remittances have a positive and statistically significant impact on Nigeria's GDP growth rate. This aligns with the endogenous growth theory, which suggests that remittances contribute to long-term economic growth by augmenting domestic savings and stimulating investment in productive sectors such as education, infrastructure, and small businesses. This result corroborates empirical studies, such as Nangih and Bail (2024), which show a positive relationship between remittance inflows and GDP growth in Nigeria. Similarly, Salahedeen and Ismaeel (2025) highlighted the critical role of remittances in poverty reduction and economic activity in Nigeria. The implication of this finding is that remittances can act as a key driver of economic development, especially when channeled into productive investments rather than being used for consumption. This finding suggests that policy interventions should focus on incentivizing the productive use of remittances to sustain long-term economic growth.

Hypothesis 2: Diaspora remittances have a significant positive effect on per capita income in Nigeria.

The results from Model 2 confirm a significant positive effect of remittances on per capita income (PCIR) in Nigeria, aligning with the push-pull theory of migration and tempered altruism theory. This suggests that remittances improve household income and reduce poverty, enhancing the overall economic well-being of recipients. Empirical studies, such as Adebayo (2024) and Ogunleye (2023), reinforce this by demonstrating that remittances contribute to filling fiscal deficits and promoting investment in health, education, and small businesses. The finding's implication is that remittances are vital in raising living standards and can act as a critical source of income diversification, reducing economic vulnerability. Governments should thus create enabling environments to ensure that remittance inflows are directed towards productive investments, ensuring sustainable growth in per capita income.

Hypothesis 3: Diaspora remittances have a significant positive effect on human capital development in Nigeria.

Model 3 further supports the hypothesis, showing that remittances have a significant positive effect on human capital development in Nigeria. This supports the pure altruism theory, which posits that remittances are often allocated towards education, healthcare, and skills acquisition, essential for human capital development. Studies such as Adeagbo (2024) and Omoniyi and Owoeye (2025) confirm this positive relationship, showing that remittances contribute to improvements in health and education outcomes, enhancing the quality of the workforce. This finding highlights that remittances play a transformative role in developing a skilled and healthy workforce, which is crucial for long-term economic development. The implication of this result is that targeted policies should encourage the use of remittances for investments in education and healthcare to maximize their impact on human capital and broader socio-economic development.

5. Conclusion and Recommendations

The aim of this study was to examine the significant impact of diaspora remittances on Nigeria's economic development, specifically focusing on GDP growth rate, per capita income, and human capital development. The study sought to determine whether remittances serve as a catalyst for

economic growth and whether they contribute positively to the socio-economic welfare of households, fostering human capital development and income enhancement in Nigeria.

The findings of this study revealed that diaspora remittances have a statistically significant positive impact on Nigeria's GDP growth, per capita income, and human capital development. Specifically, the study found that remittances contribute to long-term economic growth, enhance household income, and improve education and healthcare outcomes. These results align with established theories such as endogenous growth theory, push-pull theory, and pure altruism theory, confirming the crucial role remittances play in the Nigerian economy.

The practical implications of these findings suggest that policymakers should focus on creating conducive environments for channelling remittance inflows into productive investments, particularly in sectors such as education, healthcare, and small businesses. Additionally, strategies that encourage the formalization of remittance channels can enhance the multiplier effect of remittances on Nigeria's economic development.

Suggestions for further studies include examining the impact of remittances on specific sectors such as education and infrastructure development, and exploring the role of remittances in poverty reduction across different regions of Nigeria. Additionally, future research could investigate the effectiveness of government policies in directing remittances towards sustainable and productive uses.

References

Adeagbo, M. O. (2024). Diaspora Remittances and Human Capital Development in Nigeria. *International Journal of Economic Development Research and Investment*, *14*(1), 47-60.

Adeagbo, M. O. (2024). Diaspora remittances and human capital development in Nigeria. *International Journal of Economic Development Research and Investment, 14*(1), 47–60. https://icidr.org.ng/index.php/Ijedri/article/view/1083

Adebayo, A. (2024). Diaspora remittances inflows and Nigeria's socio-economic development: Trends and implications. *African Journal of Public Administration and Social Sciences*, *15*(1), 112-127. https://www.ajol.info/index.php/ajpas/article/view/271514

Adekunle, A. O. (2024). Remittances And Economic Growth: An Empirical Analysis From Nigeria. *International Journal of Social and Educational Innovation (IJSEIro)*, *11*(22), 149-166. Retrieved from https://www.journals.aseiacademic.org/index.php/ijsei/article/view/415

Al-Jabieri, S., Robina Ramírez, R., & Castellano-Álvarez, F. J. (2025). A comprehensive framework for mitigating Iraq's brain drain: integrating push-pull theory and SDGs to enhance talent retention. *Human Resource Development International*, 1-24. https://doi.org/10.1080/13678868.2025.2519450

Central Bank of Nigeria. (2025, April 10). Personal remittances hit $20.93bn in 2024 – CBN. *Punch*. https://punchng.com/personal-remittances-hit-20-93bn-in-2024-cbn-2/

Eke F. A., Eke I. C. (2024), Migrant Remittances and Financial Sector Development: New Evidence from Nigeria. African Journal of Economics and Sustainable Development 7(3), 1-11. DOI: 10.52589/AJESDLHFM7NGC

Emmanuel, O. O., Adebayo, O., & Daniel, O. O. (2024). Informal Financial Systems and Poverty Reduction in Developing Countries: Evidence from Nigeria. *African Development Finance Journal*, *7*(3), 1-14. https://uonjournals.uonbi.ac.ke/ojs/index.php/adfj/article/view/2191

Ibenyenwa, E. K., Ezeh, D. O., Adoms, F. U., Anaemena, H. C., Ogbonna, K., & Ezeaku, C. N. (2023). Effects of diaspora remittances on economic development: A study of Nigerian per-capita income. *GPH-International Journal of Business Management*, *6*(08), 127-139

Igbinedion, O. V., & Matthew, A. (2023). Diaspora remittance, financial system and sustainable economic development in Nigeria. *Journal of Management and Science*, *13*(3), 19-27. https://doi.org/10.26524/jms.13.30

Ikwuagwu, E. B., Onyele, K. O., & Onyele, C. O. (2024). The effect of remittances on economic growth of Nigeria. *Review of Socio-Economic Perspectives*, *9*(1), 121-134. https://doi.org/10.19275/RSEP180

Kudaisi, B. V. (2023). Migration, remittance inflows and human capital development in Nigeria. *Proceedings of the 2023 International Conference on Sustainable Development*, 1–15. https://ic-sd.org/wp-content/uploads/2023/10/2023-submission_463.pdf

Mahmud, H. (2020). From individual motivations to social determinants: Towards a sociology of migrants' remittances. *International social science journal*, *70*(237-238), 175-188. https://doi.org/10.1111/issj.12247

Mgbomene, C. (2024). Diaspora remittances and growth of the agricultural sector in Nigeria. *Journal of Academic Research in Economics, 16*(2), 387-400. http://www.jare-sh.com/downloads/jul_2024/mgbomene.pdf

Muhammad, F., Özdeşer, H., & Adedeji, A. N. (2024). Analysis of the Effects of FDI and Remittance on Economic Growth: Empirical Evidence from Nigeria. *Journal of Arid Zone Economy*, *3*(1), 60-82. https://doi.org/10.1080/13678868.2025.2519450

Nangih, E., & Bail, D. (2024). Effect of diaspora remittances on Nigeria's per capita income and gross domestic product. *World Journal of Finance and Investment Research*, *8*(5), 106–116. https://www.iiardjournals.org/get/WJFIR/VOL.%208%20NO.%205%202024/EFFECT%20OF%20DIASPORA%20106-116.pdf

Nangih, E., & Nwineewii, D. (2024). Diaspora remittances and Nigeria's human development index. *International Journal of Social Sciences and Management Research, 10*(11), 85-91. https://www.iiardjournals.org/get/IJSSMR/VOL.%2010%20NO.%2011%202024/DIASPORA%20REMITTANCES%2085-91.pdf

National Bureau of Statistics. (2024). Annual statistical bulletin. Abuja: NBS.

Nwachukwu, A. C. (2025). Diaspora remittances and economic growth of Nigeria: A multi sectorial analysis. *Social Science Research, 11*(1). https://journals.aphriapub.com/index.php/SSR/article/view/3214

Nwodo, I. P., Omeje, A. N., & Okereke, C. U. (2025). Remittance flows and welfare implications: the Nigerian experience. *International Journal of Emerging Markets*, *20*(7), 2733-2753. https://doi.org/10.1108/IJOEM-03-2022-0348

Ojeyinka, T. A., & Ibukun, C. O. (2024). Do remittances mitigate poverty? Evidence from selected countries in Africa, Asia and Latin America. *Economic Change and Restructuring*, *57*(3), 93. https://doi.org/10.1007/s10644-024-09666-1

Omoniyi, O. B., & Owoeye, T. (2025). The Impact of Remittance Inflows on Human Capital Development: Exploring the Mediating Role of Education and Healthcare Accessibility in African Developing Economies. *Journal of Applied And Theoretical Social Sciences, 7*(2), 157-171. Retrieved from https://www.iccsor.com/index.php/jatss/article/view/310.

Orekoya, S & Tijani, I. (2023). Do diaspora remittances contribute to human capital development in Nigeria? *African Journal for the Psychological Study of Social Issues*, *26*(3), 1–16. https://ajpssi.org/ajpssi/article/view/597

Ostrowski, W., & Malikov, A. (2025). Energy Rents, Remittances and Regional Trade Cooperation in Central Asia. *Europe-Asia Studies*, 1-30. https://doi.org/10.1080/09668136.2025.2512119

Owotemu, A. E., Ifechi-Fred, N., & Faleti, A. (2024). Contributions of Diaspora Remittances to Economic Growth & Development in Nigeria: A Housing Finance & Infrastructure Perspective 2000-2023. *Journal of Service Science and Management*, *17*(4), 321-344. https://www.scirp.org/journal/paperinformation?paperid=134707

Rotimi, M., Doorasamy, M., Joshua, U., Rotimi, G., Rotimi, C., Samuel, G., ... & Kimea, A. (2023). ARDL analysis of remittance and per capita growth nexus in oil dependent economy: The Nigeria's experience. *International Journal of Business and Economic Sciences Applied Research (IJBESAR)*, *15*(3), 38-51. https://www.econstor.eu/handle/10419/280261

Salahedeen, A. S., & Ismaeel, W. M. (2025). The impact of remittances on economic growth in Nigeria from 2008 to 2023. *Scientific Journal for Financial and Commercial Studies and Research*, *6*(1), 852–869. https://journals.ekb.eg/article_400426_3e3007764037f2e7a302f825397d30f7.pdf

Salahedeen, A. S., & Ismaeel, W. M. (2025). The impact of remittances on economic growth in Nigeria from 2008 to 2023. *Scientific Journal for Financial and Commercial Studies and Research*, *6*(1), 852–869. https://journals.ekb.eg/article_400426_3e3007764037f2e7a302f825397d30f7.pdf