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ARTICLE

International Remittances and Human Capital Development in Nigeria: Evidence from a Time Series Analysis

Teniola. A. Adesanya[1†]; Oluwaseun O. Olalekan[1†]

[1] Department of Banking and Finance, the Polytechnic, Ibadan, Oyo State, Nigeria.
[†] Authors contributed equally.

* Corresponding Author: tennytone@yahoo.com

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Abstract

This paper examines whether international remittances serve as a driver of human capital development in Nigeria or primarily function as short-term household support. Using annual data for 1990–2024, the study analyses the relationship between remittances and three dimensions of human capital—education, health, and income—proxied by school enrolment, life expectancy, and real GDP per capita. The empirical approach combines unit root testing, Johansen cointegration, and a Vector Autoregressive (VAR) framework to distinguish between correlation, causality, and long-run dynamics. The results reveal a clear divergence between correlation and causation. While remittances are strongly associated with improvements in life expectancy and income, they exert no statistically significant causal effect on any of the human capital indicators and show no evidence of a stable long-run equilibrium relationship. These findings suggest that remittances in Nigeria act primarily as short-term welfare stabilisers rather than as engines of sustained human capital accumulation. The study highlights the importance of institutional and financial conditions in mediating development outcomes and underscores the need for policy frameworks that channel remittances into productive, human capital-enhancing investments.

Keywords: International remittances, human capital development, education, healthcare, Nigeria, VAR model, diasporas Africa

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1. Introduction

International remittances have become one of the most significant and resilient sources of external finance for developing economies, often surpassing foreign direct investment and official development assistance in both scale and stability. In recent years, flows to low- and middle-income countries have exceeded hundreds of billions of dollars annually, underscoring their growing developmental relevance. Nigeria, as the largest recipient in Sub-Saharan Africa, consistently attracts substantial remittance inflows, reflecting the depth of its diaspora networks and their continued economic engagement with the domestic economy.

Unlike other forms of capital flows, remittances are largely driven by altruistic and social motivations and are typically channeled directly to households. In theory, such inflows relax liquidity constraints and enable increased spending on education, healthcare, and other components of human capital (**Uweis, 2022**). This has led to a broad expectation in literature that remittances play a positive role in development by facilitating investments that enhance productivity and long-term welfare. Empirical evidence from various developing countries appears to support this view, frequently reporting positive associations between remittances and indicators such as school enrolment, health outcomes, and income levels.

However, this optimistic narrative is far from settled. A growing body of research points to the context-dependent nature of remittance effects, emphasising that positive associations do not necessarily imply causal or sustained developmental impact. In many cases, remittances are found to operate primarily as consumption-smoothing mechanisms, helping households cope with income volatility rather than generating structural improvements in human capital. Moreover, the developmental potential of remittance is often mediated by broader institutional and financial conditions, including the quality of public service delivery, access to formal financial systems, and governance effectiveness. These issues are particularly salient in the Nigerian context. Despite substantial remittance inflows, the country continues to face persistent challenges in education and healthcare outcomes, alongside structural constraints such as weak institutions and limited financial intermediation. At the same time, high levels of skilled emigration raise concerns about a potential trade-off between remittance inflows and domestic human capital retention. This creates an unresolved empirical question: do remittances contribute meaningfully to human capital development in Nigeria, or do they primarily provide short-term welfare support without generating lasting systemic effects?

This paper addresses this question by re-examining the remittance–human capital nexus in Nigeria using a time-series framework that explicitly distinguishes between correlation, causality, and long-run equilibrium relationships. Drawing on annual data from 1990 to 2024, the study employs a Vector Autoregressive (VAR) model to analyse the dynamic interactions between remittances and three key dimensions of human capital—education, health, and income. In doing so, it moves beyond the predominantly cross-sectional approaches in literature and provides country-specific evidence on the nature and persistence of remittance effects (**Ekeocha, 2021**). The analysis reveals a consistent pattern: although remittances are strongly correlated with improvements in certain human capital indicators, they do not exert statistically significant causal effects within the dynamic system, nor do they exhibit a stable long-run relationship with these variables. This divergence between correlation and causation suggests that remittances in Nigeria function primarily as short-term welfare stabilisers rather than as drivers of sustained human capital accumulation. By highlighting this distinction, the study contributes to a more nuanced understanding of the developmental role of remittances and underscores the importance of complementary institutional and policy frameworks in translating financial inflows into long-term human capital gains.

2. LITERATURE REVIEW

2.1 Conceptual review

International remittances are broadly defined as cross-border, person-to-person monetary flows sent by migrant workers or diaspora members, primarily for household consumption or investment in their countries of origin (**World Bank, 2023**). These transfers may take the form of cash, goods, or services, channeled through formal institutions or informal networks. Non-monetary remittances, encompassing knowledge transfer, mentorship, and diaspora-led community initiatives, represent a further dimension that is rarely captured in official statistics but carries long-term developmental significance (**Meyer, 2001; Newland & Patrick, 2004**).

Human capital development refers to the process of enhancing individuals' capabilities through investment in education, health, skills, and overall well-being, premised on the notion that people are the most productive assets in an economy (**Becker, 1993**). In the Nigerian context, despite improvements in school enrollment and healthcare coverage, systemic challenges, including inadequate public investment, brain drain, and socio-economic inequality continue to constrain human capital outcomes. Remittances often serve as an alternative source of financing for these essential services, particularly in underserved regions.

2.2 Theoretical framework

This study draws on six complementary theoretical perspectives. Human Capital Theory (**Becker, 1964**; **Schultz, 1961**) provides the foundational premise that remittances reduce liquidity constraints, enabling households to invest in education and health. Endogenous Growth Theory (Romer; Lucas) suggests that such investments create dynamic feedback loops between human capital accumulation and economic growth (**Chukwunonso, 2024**). The Solow Growth Model, as extended by **Adepoju and Ibrahim (2023)**, treats remittances as capital injections that raise labor productivity through educational investment.

Financial Intermediation Theory highlights that the developmental impact of remittances is amplified when

channeled through well-developed financial systems (**Uweis, 2022; Ibe & Obasi, 2018**). Institutional Theory (**Ekeocha, 2021**) emphasizes that governance quality critically mediates the translation of remittance inflows into human capital outcomes. Finally, Keynesian Theory (**Bakare, 2019**) focuses on the demand-side effects of remittances, positing that increased household income stimulates consumption and investment in social sectors.

2.3 Empirical review

A growing body of empirical literature has examined the relationship between international remittances and human capital development, with findings that are generally positive but highly context-dependent. Early cross-country evidence by **Adams and Page (2005)** shows that remittances significantly reduce poverty and indirectly improve welfare outcomes, including education and health. Similarly, **Amuedo-Dorantes and Pozo (2010)**, using household-level data from Latin America, find that remittances increase school attendance and educational expenditure, particularly among liquidity-constrained households. In a related study, **Lu and Treiman (2011)** demonstrate that remittances improve educational attainment in migrant-sending communities, although the magnitude of the effect varies across income groups.

More recent macro-level analyses reinforce the positive association. Chukwunonso (2024), using panel data for ECOWAS countries (1996–2022) and the Human Capital Index as a proxy, finds a strong positive relationship between remittances and human capital, albeit without capturing country-specific heterogeneity. **Adepoju and Ibrahim (2023)** similarly report that remittances significantly increase average years of schooling across Sub-Saharan Africa, while **Barwa (2018)** provides cross-country evidence that remittance inflows are associated with improved health outcomes and reduced child mortality. However, a growing strand of literature emphasises that these positive effects are neither automatic nor uniform. **Azizi (2018)**, using a panel of developing countries, finds that while remittances increase household investment in education, they simultaneously reduce labour force participation, suggesting the presence of behavioural trade-offs. **Chami et al. (2008)** go further to argue that remittances may act as compensatory income transfers rather than productive investments, thereby limiting their long-term growth impact. In a similar **vein, Sharma (2024)** concludes that remittances primarily function as consumption-smoothing mechanisms, with limited evidence of sustained effects on structural development indicators.

At the country level, the evidence is equally mixed. **Okwu et al. (2023)**, focusing on Nigeria using time-series data (1990–2020), find that remittances significantly improve educational attainment and health outcomes, although their analysis does not account for regional disparities or dynamic feedback effects. **Bakare (2019)** also reports a positive relationship between remittances and human capital development in developing economies, attributing this to increased household expenditure on education and healthcare. In contrast, **Osabuohien and Efobi (2013)** caution that remittances in Africa may have limited developmental impact where institutional quality is weak, as funds are often channelled into consumption rather than productive investment. The role of mediating factors has therefore become central to recent empirical debates. **Uweis (2022),** employing a System GMM framework, demonstrates that financial development significantly enhances the capacity of remittances to support sustainable human capital investment. Similarly, **Ibe and Obasi (2018)** show that liquidity conditions and access to financial services determine whether remittances translate into productive outcomes. **Ekeocha (2021)** further finds that institutional quality particularly governance effectiveness, and regulatory frameworks amplifies the positive effects of remittances on human development in Sub-Saharan Africa.

Additional evidence highlights the importance of structural and demographic factors. Docquier and Rapoport (2012) emphasise the dual effect of migration, whereby remittances increase income flows but skilled emigration simultaneously reduces the domestic stock of human capital. **Meyer (2001)** and Newland and **Patrick (2004)** extend this perspective by highlighting the role of diaspora networks in knowledge transfer and capacity building, suggesting that non-monetary remittances may be equally important but are often omitted from empirical analysis. **Gupta et al. (2009)** find that remittances contribute to financial development and poverty reduction, which indirectly supports human capital accumulation, although the strength of these effects varies across countries.

Despite this extensive body of work, several limitations remain. First, much of the literature relies on cross-sectional or panel data approaches, which, while useful for identifying broad patterns, often fail to capture country-specific dynamics and feedback effects over time. Second, remittances are frequently treated as a homogeneous variable, without distinguishing between their consumption and investment components or accounting for informal transfer channels. Third, relatively few studies explicitly differentiate between correlation and causality, raising concerns about the robustness of reported positive relationships. Finally, there remains a paucity of comprehensive, time-series analyses focused on Nigeria that jointly examine short-run dynamics, causal interactions, and long-run

equilibrium relationships within a unified econometric framework. This study addresses these gaps by employing a time-series econometric approach to examine the remittance–human capital nexus in Nigeria over the period 1990–2024. By integrating unit root testing, cointegration analysis, and a Vector Autoregressive (VAR) framework, the analysis provides a more nuanced understanding of the dynamic and potentially non-causal nature of the relationship, thereby contributing to the ongoing debate on the developmental role of remittances.

3. RESEARCH METHODOLOGY

3.1 Data and Source

The key variables are operationalized as follows: Human capital development is disaggregated into three proxies, Education (EDU), measured by gross secondary school enrollment rate (%); Health (HEA), measured by life expectancy at birth (years); and Income (INC), measured by real per capita GDP (constant USD). Remittances (REM) are measured as personal remittance inflows as a percentage of GDP. Financial development (FD) is proxied by domestic credit to the private sector (% of GDP), and Inflation (INF) is measured by annual CPI percentage change. All variables are collected annually and transformed into natural logarithmic form where appropriate to address skewness and heteroskedasticity.

3.2 Model specification

Given that human capital is a multi-dimensional construct comprising education, health, and income, the study specifies three separate but interrelated equations within a VAR framework, treating each component as a distinct dependent variable. This approach avoids the aggregation bias that would result from collapsing all human capital dimensions into a single composite dependent variable and allows for a more granular assessment of the differential effects of remittances across each dimension of human capital development. The system of VAR equations is specified as follows:

VAR Education Equation

$$EDU_t = \alpha_{10} + \sum_{p} \alpha_{11i}\, EDU_{t-i} + \sum \alpha_{12i}\, REM_{t-i} + \sum \alpha_{13i}\, LIFE_{t-i} + \sum \alpha_{14i}\, INC_{t-i} + \varepsilon_{1t} \quad \ldots (1)$$

VAR Health Equation

$$LIFE_t = \alpha_{20} + \sum \alpha_{21i}\, LIFE_{t-i} + \sum \alpha_{22i}\, REM_{t-i} + \sum \alpha_{23i}\, EDU_{t-i} + \sum \alpha_{24i}\, INC_{t-i} + \varepsilon_{2t} \quad \ldots (2)$$

VAR Income Equation

$$INC_t = \alpha_{30} + \sum \alpha_{31i}\, INC_{t-i} + \sum \alpha_{32i}\, REM_{t-i} + \sum \alpha_{33i}\, EDU_{t-i} + \sum \alpha_{34i}\, LIFE_{t-i} + \varepsilon_{3t} \quad \ldots (3)$$

Where the summations run from i = 1 to p, and p denotes the optimal lag length determined by the Akaike Information Criterion (AIC). In compact matrix notation, the VAR(p) system can be written as:

$$Y_t = A_0 + A1Y_{t-1} + A_2Y_{t-2} + \ldots + A_pY_{t-p} + \varepsilon_t \quad \ldots (4)$$

Where $Y_t = [EDU_t, LIFE_t, INC_t, REM_t]'$ is a (4 × 1) vector of endogenous variables at time t; A_0 is a (4 × 1) vector of intercept terms; $A_1, A_2, \ldots, A_p$ are (4 × 4) matrices of autoregressive coefficients at each lag; and $\varepsilon_t = [\varepsilon_{1t}, \varepsilon_{2t}, \varepsilon_{3t}, \varepsilon_{4t}]'$ is a (4 × 1) vector of white noise error terms satisfying the standard VAR assumptions: $E(\varepsilon_t) = 0$, $E(\varepsilon_t\varepsilon'_t) = \Sigma$ (a positive definite covariance matrix), and $E(\varepsilon t\varepsilon's) = 0$ for $t \neq s$.

The variable definitions are as follows:

Symbol	Variable	Measurement
EDUt	Education	Gross secondary school enrollment rate (%), proxy for the education dimension of human capital
LIFEt	Health	Life expectancy at birth (years), proxy for the health dimension of human capital
INCt	Income	Real per capita GDP (constant USD), proxy for the income dimension of human capital
REMt	Remittances	Personal remittance inflows as a percentage of GDP — key independent variable of interest
α10–α30	Intercepts	Constant terms for each equation in the VAR system
αjki	Coefficients	Autoregressive coefficient matrices capturing the effect of variable k on variable j at lag i
p	Lag length	Optimal number of lags selected via the Akaike Information Criterion (AIC)
εjt	Error terms	White noise disturbance terms assumed to be serially uncorrelated with zero mean and constant variance

Table 1: Variable Definitions and Measurements

Estimation technique

While Ordinary Least Squares (OLS) regression was initially considered as a baseline estimation approach, its direct application to time-series data requires the condition of stationarity. Since the ADF unit root tests confirmed that all variables are integrated of order one I(1), the direct application of OLS to the level data was rendered inappropriate due to the well-documented risk of spurious regression associated with non-stationary time series (**Granger & Newbold, 1974**). Consequently, the Johansen cointegration test was conducted to determine whether a stable long-run equilibrium relationship existed among the variables. In the absence of cointegration, a Vector Autoregressive (VAR) model estimated in first differences was adopted as the primary analytical framework. The VAR model is particularly suited to this study as it simultaneously estimates three interrelated equations, one for each human capital dimension (education, health, and income), treating each as a dependent variable while allowing for dynamic feedback interactions among all variables in the system. The optimal lag length was selected using the Akaike Information Criterion (AIC), and all estimations were performed in R statistical software.

4. RESULTS AND DISCUSSION

Table 2 presents the descriptive statistics for all key variables over the study period. International remittances ranged from 16.12 to 23.91, with a mean of 22.02, reflecting Nigeria's growing integration into global remittance flows. Primary school enrollment averaged 89.45%, life expectancy at birth averaged 49.52 years, and real per capita GDP averaged USD 1,553.1, collectively indicating moderate but uneven human capital progress relative to global benchmarks.

Statistic	International Remittance	Primary Enrolment (%)	Life Expectancy (yrs)	Real per Capital GDP (USD)
Minimum	16.12	76.46	45.48	480.7
First quartile	20.81	83.98	46.74	720.3
Median	23.56	88.68	50.13	1724.1
Mean	22.02	89.45	49.52	1553.1
Third Quartile	23.74	95.00	51.91	2133.2
Maximum	23.91	100.19	53.45	3088.7

Table 2: Descriptive Statistics of Key Variables (1990–2024)

Correlation Analysis

Table 3 presents the Pearson correlation coefficients among the four key variables. The results reveal three important bivariate relationships. First, international remittances exhibit a strong and positive correlation with life expectancy (r = 0.90), suggesting that higher remittance inflows are associated with improvements in population health outcomes. Second, remittances are also strongly and positively correlated with real per capita GDP (r = 0.78), indicating that diaspora inflows tend to coincide with higher income levels. Third, the correlation between remittances and primary school enrollment is negative and weak (r = -0.17), suggesting that higher remittance inflows do not necessarily translate into improved school participation rates. It is important to note, however, that these correlation coefficients capture bivariate associations only and do not imply causality. The dynamic causal relationships are formally examined through the VAR estimation

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Variables	Remittances	Enrollment	Life Exp.	GDP p.c.
Remittances	1.00	-0.17	0.900***	0.78***
Enrollment	-0.17	1.00	-0.23	-0,19
Life Expectancy	0.90***	-0.23	1.00	0.85***
GDP per Capita	0.78***	-0.19	0.85***	1.00

Table 3: Pearson Correlation Matrix of Key Variables

Note: *** denotes statistical significance at the 1% level. Values on the diagonal represent perfect self-correlation

Stationarity Tests

The ADF unit root test results, presented in Table 4, confirm that all variables are non-stationary at levels (test statistic < critical value of -1.95 at 5% significance) but become stationary upon first differencing, indicating integration of order one, I(1). This finding confirms that direct OLS estimation on level data would produce spurious results, thereby justifying the VAR framework adopted in this study.

Variable	Level Stat.	1st Diff Stat.	Critical Value	Order
Remittances	-0.1379	-3.9596	-1.95	I(1)
Primary Enrollment	0.0010	-4.5915	-1.95	I(1)
Life Expectancy	-0.0672	-3.6279	-1.95	I(1)
Real GDP per Capita	-0.7157	-3.5764		

Table 4: ADF Unit Root Test Results

Cointegration analysis

The Johansen cointegration test revealed no evidence of long-run equilibrium relationships among the variables. The trace statistic for r = 0 (14.94) falls below the 5% critical value (27.14), indicating failure to reject the null hypothesis of no cointegrating equations. Consequently, a VAR model in first differences was estimated rather than a Vector Error Correction Model (VECM), consistent with standard econometric practice.

VAR Estimation results

Three VAR equations were estimated simultaneously within a single system, each with a different human capital component as the dependent variable, education (primary enrollment), health (life expectancy), and income (real per capita GDP), while remittances and lagged values of all variables served as regressors. Table 5 summarizes the key coefficient estimates.

Variable	Estimate	Std. Error	t-value	p-value
Panel A: Dependent Variable = Primary Enrollment				
REM (lag 1)	0.6753	1.7290	0.391	0.6999
REM (lag 2)	-1.1535	1.2148	-0.949	0.3527
Enrollment (lag 1)	0.5818	0.2293	2.537	0.0188*
Enrollment (lag 2)	-0.0939	0.2324	-0.404	0.6902
Panel B: Dependent Variable = Life Expectancy				
REM (lag 1)	0.4506	0.5458	0.826	0.4180
REM (lag 2)	0.2433	0.3835	0.634	0.5320
Life Expectancy (lag 1)	0.3227	0.6070	0.532	0.6000
Panel C: Dependent Variable = Real GDP per Capita				
REM (lag 1)	172.558	142.789	1.208	0.2397
REM (lag 2)	85.694	100.325	0.854	0.4022
GDP p.c. (lag 1)	1.1564	0.2709	4.268	0.0003***
Enrollment (lag 2)	-37.680	19.193	-1.963	0.0624.

Table 5: VAR Estimation Results. Note: *p<0.05; ***p<0.001; . p<0.10

The empirical results reveal a nuanced and largely insignificant causal relationship between international remittances and human capital development in Nigeria across all three dimensions examined. For primary school enrollment (Panel A), remittances at both first and second lags were statistically insignificant ($p > 0.05$), indicating that inflows do not directly translate into higher school participation. Instead, lagged

enrollment itself emerged as the only significant predictor (β = 0.5818, p = 0.0188), highlighting the path-dependent nature of educational outcomes, a finding consistent with **Adepoju and Ibrahim (2023)**.

For life expectancy (Panel B), no variable, including remittances at any lag was statistically significant. This result echoes **Ekeocha (2021)**, who emphasized the mediating role of institutional quality in Sub-Saharan Africa. Nigeria's weak healthcare infrastructure and governance challenges may prevent remittance expenditures on health from translating into systemic improvements in population-level health outcomes, even where the bivariate correlation is strong (r = 0.90).

For real per capita GDP (Panel C), remittances were again insignificant, while GDP itself at lag one showed a strong, positive, and highly significant effect (β = 1.1564, p = 0.0003). This finding suggests that economic growth in Nigeria is largely self-reinforcing rather than externally driven by remittance inflows, consistent with **Bakare (2019)** and **Sharma (2024)**, who noted that remittances primarily serve as consumption stabilizers at the household level rather than as drivers of macroeconomic productivity.

The absence of cointegration across all variables further indicates that remittances do not establish a stable long-run growth path for human capital in Nigeria. This contrasts with findings from financially more developed contexts (**Uweis, 2022**) and underscores the institutional and structural bottlenecks that limit the productive deployment of diaspora inflows in the Nigerian economy. Collectively, the findings align with **Chukwunonso (2024)** and **Azizi (2018)** in confirming that while remittances have welfare-stabilizing effects, their translation into sustained human capital improvement depends critically on complementary institutional, financial, and policy frameworks.

5. Conclusion

This study set out to re-examine the relationship between international remittances and human capital development in Nigeria by distinguishing between correlation, causality, and long-run dynamics within a unified time-series framework. Using annual data from 1990 to 2024 and a Vector Autoregressive (VAR) approach, the analysis provides evidence that challenges the widely held assumption that remittances constitute an automatic driver of development.

The findings reveal a consistent and policy-relevant pattern. While remittance inflows are strongly associated with improvements in life expectancy and per capita income, they exert no statistically significant causal influence on education, health, or income within the dynamic system, and do not exhibit a stable long-run equilibrium relationship with these indicators. This divergence between correlation and causation suggests that remittances in Nigeria function primarily as short-term welfare stabilisers, helping households' smooth consumption and cope with income volatility, rather than serving as catalysts for sustained human capital accumulation.

These results carry important implications for both policy and development strategy. First, they underscore that the developmental impact of remittances is not automatic but contingent on the institutional and financial environment within which they are received. In the absence of well-developed financial systems and effective public service delivery, remittance inflows are more likely to be directed towards immediate consumption rather than long-term investments in education and healthcare. Strengthening financial intermediation through expanded access to formal savings instruments, credit facilities, and remittance-linked financial products would therefore be critical in transforming remittances into productive capital.

Second, the absence of measurable effects on educational outcomes points to the need for more targeted policy instruments that explicitly channel remittances into human capital investment. One promising approach is the development of diaspora-linked education financing mechanisms, including education bonds, matched savings schemes, and tuition-linked remittance platforms, which can incentivise migrants to allocate funds directly towards schooling and skills development. Without such structured channels, the link between remittances and educational attainment is likely to remain weak and indirect.

Third, the lack of impact on health outcomes, despite strong correlation, highlights underlying inefficiencies in the healthcare system. Expanding access to affordable and reliable health insurance, particularly schemes that can be funded or supplemented through remittance inflows, would help ensure that household-level health expenditures translate into measurable improvements in population health. Complementary investments in public healthcare infrastructure and regulatory oversight are equally necessary to enhance the effectiveness of such spending.

More broadly, the findings suggest that integrating remittances into national development planning requires a shift from a passive to an active policy stance. This includes reducing transaction costs associated with remittance transfers, promoting formal remittance channels, and creating institutional frameworks that enable the pooling of diaspora resources for collective investment in education, healthcare, and small-scale enterprise development. Such measures would not only enhance the developmental impact of remittances but also mitigate their current limitation as predominantly consumption-driven flows.

References

Adams, R. H., & Cuecuecha, A. (2013). The impact of remittances on investment and poverty in Ghana. *World Development*, 50(1), 24–40. https://doi.org/10.1016/j.worlddev.2013.04.009

Adams, R. H., & Page, J. (2005). Do international migration and remittances reduce poverty in developing countries? *World Development*, 33(10), 1645–1669. https://doi.org/10.1016/j.worlddev.2005.05.004

Adepoju, A., & Ibrahim, I. (2023). The impact of remittances on human capital in Sub-Saharan African countries. *African Development Review*, 35(2), 187–201. https://doi.org/10.1111/1467-8268.12607

Amuedo-Dorantes, C., & Pozo, S. (2010). Accounting for remittance and migration effects on children's schooling. *World Development*, 38(12), 1747–1759. https://doi.org/10.1016/j.worlddev.2010.05.008

Azizi, S. (2018). The impacts of workers' remittances on human capital and labor supply in developing countries. *Economic Modelling*, 75, 377–396. https://doi.org/10.1016/j.econmod.2018.07.011

Bakare, A. (2019). Foreign remittances and human resource development in developing countries. *Journal of Economics and Development Studies*, 7(1), 1–15.

Barro, R. J. (2001). Human capital and growth. *American Economic Review*, 91(2), 12–17. https://doi.org/10.1257/aer.91.2.12

Barwa, S. (2018). Remittances, poverty, and human capital: Evidence from developing countries. *Journal of International Development*, 30(4), 556–573. https://doi.org/10.1002/jid.3352

Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press.

Carling, J. (2008). The determinants of migrant remittances. *Oxford Review of Economic Policy*, 24(3), 581–598. https://doi.org/10.1093/oxrep/grn030

Central Bank of Nigeria (CBN). (2022). *Statistical Bulletin*. Abuja: CBN.

Chami, R., Fullenkamp, C., & Jahjah, S. (2008). Macroeconomic consequences of remittances. *IMF Occasional Paper No. 259*. International Monetary Fund.

Chukwunonso, N. (2024). Examining the impact of remittances on human capital development: Evidence from ECOWAS. *West African Journal of Economics*, 12(1), 34–52.

Docquier, F., & Rapoport, H. (2012). Globalization, brain drain, and development. *Journal of Economic Literature*, 50(3), 681–730. https://doi.org/10.1257/jel.50.3.681

Ekeocha, P. (2021). Remittances, institutions, and human development in Sub-Saharan Africa. *Journal of African Development*, 23(1), 45–67.

Granger, C. W. J., & Newbold, P. (1974). Spurious regressions in econometrics. *Journal of Econometrics*, 2(2), 111–120. https://doi.org/10.1016/0304-4076(74)90034-7

Gupta, S., Pattillo, C., & Wagh, S. (2009). Effect of remittances on poverty and financial development in Sub-Saharan Africa. *World Development*, 37(1), 104–115. https://doi.org/10.1016/j.worlddev.2008.05.007

Ibe, C., & Obasi, T. (2018). Role of liquidity in the remittances–human capital development nexus in emerging economies. *International Journal of Economics and Finance*, 10(2), 44–59.

Lu, Y., & Treiman, D. J. (2011). Migration, remittances and educational stratification. *Social Forces*, 89(4), 1119–1143. https://doi.org/10.1093/sf/89.4.1119

Meyer, J. B. (2001). Network approach versus brain drain: Lessons from the diaspora. *International Migration*, 39(5), 91–110. https://doi.org/10.1111/1468-2435.00173

Newland, K., & Patrick, E. (2004). *Beyond remittances: The role of diaspora in poverty reduction in their countries of origin*. Migration Policy Institute.

Okwu, O. J., Nwosu, A., & Iheanacho, C. (2023). Do diaspora remittances contribute to human capital development in Nigeria? *Journal of Development Policy and Practice*, 8(3), 212–228.

Osabuohien, E. S., & Efobi, U. R. (2013). Africa's diaspora remittance flows: Boon or bane? *African Review of Economics and Finance*, 5(1), 109–130.

Ratha, D., De, S., Plaza, S., Schuettler, K., Wyss, H., Yi, S., & Yousefi, S. R. (2019). Data release: Record high remittance flows in 2018. World Bank.

Sharma, D. (2024). A review on remittances and their effect on human development in developing countries. *Global Development Review*, 6(2), 98–115.

Uweis, A. (2022). Financial development, remittances, and sustainable human capital investment.

Journal of Sustainable Finance and Development, 5(1), 22–41.

World Bank. (2023). *Migration and Development Brief 38: Remittances remain resilient but are slowing*. Washington, DC: World Bank.