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Migrant Remittances and Human Capital Development in Nigeria

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ABSTRACT

This study examines the impact of migrant remittances on human capital development in Nigeria between 1990 and 2024, using the Human Development Index (HDI) as the primary metric of socio-economic progress. Specifically, it investigates the effects of personal remittances, institutional quality, and government education and health expenditure on HDI. Secondary time-series data were obtained from the World Development Indicators, the Central Bank of Nigeria Statistical Bulletin, and the Worldwide Governance Indicators. The study employed the Engel-Granger cointegration technique and an Error Correction Model (ECM) to estimate both short-run dynamics and the long-run equilibrium relationship. Empirical findings revealed that remittance inflows and institutional quality have positive but statistically insignificant short-run effects on HDI. In contrast, government expenditure on education and health demonstrated a strong positive and significant short-run impact. The study confirms a significant long-run cointegrating relationship among the variables, with an error correction mechanism indicating that approximately 19% of short-run deviations are corrected annually. It concludes that while remittances are substantial, their translation into tangible human development is not immediate, and effective government social spending is critical for short-term gains, with institutional quality providing the essential long-run framework. The study therefore recommends policies to channel remittances into productive human capital investments, enhance the efficiency of public social expenditure, and implement foundational governance reforms to strengthen institutional quality.

1.0 INTRODUCTION

1.1 Background to the Study

Remittances, the financial lifelines sent by migrants to their families back home, have become a defining feature of the global economy, representing a critical source of external financing for developing countries that often rivals or exceeds traditional flows like Foreign Direct Investment (FDI). In Nigeria, the world's top recipient of remittances in Sub-Saharan Africa, these inflows have been consistently substantial, reaching $20.1 billion in 2022 (World Bank, 2023). While the macroeconomic significance of remittances for foreign exchange reserves and balance of payments is widely acknowledged, their potential role in fostering human capital development—the skills, knowledge, and health that enable people to be productive—demands a distinct historical and contemporary examination. The trajectory of Nigerian migration and its associated financial flows has evolved significantly since 1980. The 1980s marked a pivotal shift; the oil glut and subsequent economic crisis, culminating in the Structural Adjustment Program (SAP) of 1986, triggered a mass exodus of both skilled and unskilled Nigerians. This period transformed remittances from sporadic familial support into a crucial survival mechanism, buffering households against sharp declines in real income and deteriorating public services (Adekunle & Tella, 2020). The 1990s and the return to democracy in 1999 saw the Nigerian diaspora become more entrenched and diversified, leading to a formalization of remittance channels through Money Transfer Operators (MTOs). The 21st century has been characterized by the digital revolution in financial services, reducing transfer costs and increasing accessibility, and a growing policy discourse on leveraging remittances for national development. Throughout these phases, a consistent narrative has been the chronic underfunding and inefficiency of Nigeria's public sectors for education and health. Against this backdrop, remittances have emerged as a private, decentralized financing mechanism for human capital. Households receiving remittances are empirically observed to have better educational outcomes, from higher school enrollment to the ability to afford private tutoring and university fees (Oluwatayo & Ojo, 2022). Similarly, these funds enable access to better healthcare, including routine check-ups, medication, and specialized treatments often unavailable in underfunded public facilities (Chukwuone et al., 2023). Therefore, remittances are not merely financial transfers but potential investments in the nation's most valuable asset: its people. Their sustained flow offers a unique, household-driven pathway to augmenting Nigeria's human capital base, which is fundamental to achieving sustainable long-term economic development and breaking the cycle of poverty.

1.2 Statement of the Problem

Despite Nigeria's position as a remittance powerhouse in Africa, receiving over $20 billion annually (World Bank, 2023), the country continues to grapple with profound human capital development challenges. Nigeria ranks 164th out of 189 countries on the United Nations Development Programme's (UNDP, 2024) Human Development Index, with indicators showing high rates of out-of-school children, poor learning outcomes, and high maternal and child mortality. This presents a critical paradox: the substantial and resilient inflow of remittances coexists with persistently low levels of human capital formation. The core of this problem is threefold, directly corresponding to the key dimensions of human capital under investigation. First, the direct link between remittance inflows and educational outcomes remains ambiguous. While remittances undoubtedly increase household disposable income, the extent to which this income is systematically allocated to education—beyond immediate consumption—is not fully understood. Concerns persist that funds may be diverted to other uses, or that the "migration effect" (the absence of a parent) may negatively impact child welfare, potentially offsetting the financial benefits (Nwosu & Orji, 2021). Second, the relationship between remittances and health outcomes is complex and under-researched in the Nigerian context. Remittances can theoretically finance better nutrition, sanitation, and healthcare access. However, the high cost of healthcare in Nigeria, coupled with informational asymmetries, may mean that remittances are often used for curative rather than preventive care, limiting their long-term impact on the population's health stock (Bakare & Adeyemi, 2022). The third dimension of the problem involves the role of public social expenditure. The Nigerian government's allocation to education and health has consistently fallen short of international benchmarks. A critical, unresolved question is whether remittances act as a substitute for poor public services, filling a critical gap, or whether they inadvertently enable government complacency by alleviating social pressure, thereby creating a dependency on private transfers that perpetuates systemic underinvestment (Ogwumike & Urmila, 2023). Consequently, the central problem this study addresses is the lack of a comprehensive empirical analysis that simultaneously examines the impact of remittance inflows on both the educational and health components of human capital development, while also accounting for the critical role of government social expenditure. Existing studies have often focused on a single dimension or failed to integrate public finance into the analytical framework. This study seeks to fill this gap by providing a holistic investigation into how this massive private financial inflow interacts with public investment to shape the human capital trajectory of Nigeria.

1.3 Objective of the Study

The broad objective of this study is to empirically investigate the impact of migrant remittances on human capital development in Nigeria from 1980 to 2023. The specific objectives are:

1. To examine the relationship between remittance inflows and human development index in Nigeria.
2. To investigate the relationship between institutional qualities framework and human development index in Nigeria.
3. To determine the relationship between government expenditure and human development index in Nigeria.

1.4 Research Questions

This study is guided by the following research questions:

1. What is the relationship between remittance inflows and the Human Development Index (HDI) in Nigeria?
2. To what extent does the institutional quality framework impact Human Development Index (HDI) in Nigeria?
3. What is the relationship between government expenditure and the Human Development Index (HDI) in Nigeria?

1.5 Research Hypotheses

H_{01}: There is no significant relationship between remittance inflows and the Human Development Index (HDI) in Nigeria.
H_{02}: The institutional quality framework has no significant impact on the Human Development Index (HDI) in Nigeria.
H_{03}: There is no significant relationship between government expenditure and the Human Development Index (HDI) in Nigeria.

1.6 Significance of the Study

The findings of this research will be of immense value to various stakeholders. For policymakers in national and state governments, the study will provide critical evidence on the role of remittances as a complement or substitute to public social services, informing strategies for targeted interventions and collaborative frameworks with diaspora organizations. For development practitioners and international agencies, the results can guide the design of programs that leverage remittance channels to fund specific human capital projects, such as school scholarships or community health insurance schemes. For financial institutions, understanding the human capital investment patterns of recipient households can spur the innovation of tailored financial products, like education savings accounts or health micro-insurance policies, linked to remittance flows. Academically, the study will contribute to the evolving literature on migration and development by providing a nuanced, integrated analysis of remittances and human capital in Nigeria, serving as a benchmark for future research. Finally, for the Nigerian diaspora and recipient families, the study can illuminate the broader societal impact of their financial contributions, potentially encouraging more strategic and investment-oriented use of remittances to build long-term human capabilities.

1.7 Scope of the Study

This study examines the impact of migrant remittances on human capital development in Nigeria from 1990 to 2024, using the Human Development Index (HDI) as the key metric. The analysis utilizes secondary time-series data on HDI, Personal Remittances Received (REM), an Institutional Quality (INSQ) index proxy by Regulatory Quality Index, and Government Expenditure (GOVEXP), sourced from the UNDP, World Bank, and Central Bank of Nigeria (2024) to ensure a comprehensive empirical investigation.

2.0 LITERATURE REVIEW

2.1 Conceptual Literature

2.1.1 Conceptual Review of Remittances, Institutional Quality, Government Expenditure, and Human Capital Development in Nigeria

This study is anchored on four interconnected concepts. Remittances are defined as personal, cross-border financial transfers made by migrants to residents in their country of origin, serving as a vital source of household income and national foreign exchange (World Bank, 2023). Human Capital Development refers to the process of enhancing the productive capacities of a population through investments in education, health, and skills, commonly measured by enrollment rates, literacy, life expectancy, and mortality rates (UNDP, 2024). Government Social Expenditure encompasses public financial allocations to the education and health sectors, signifying the state's commitment to its citizenry's well-being (CBN, 2024). Crucially, the Institutional Quality Framework provides the governance context in which these factors interact. It refers to the set of formal and informal rules, their enforcement mechanisms, and the overall effectiveness of governance in a country. Key dimensions include control of corruption, government effectiveness, regulatory quality, and the rule of law (Eboreime & Tanko, 2024). In the Nigerian context, institutional quality determines the efficiency of public resource allocation and the accountability of public officials (Nwankwo, 2023). The conceptual interrelationship is complex and critically mediated by institutional quality. Remittances directly augment household income, relaxing budget constraints and enabling private investments in education and health. This can theoretically complement government efforts. However, in a context of weak institutions and chronic underfunding, remittances primarily act as a substitute for ineffective public services (Iheonu et al., 2023). The institutional framework is pivotal in explaining a potential "moral hazard" effect. Where institutions are weak and accountability is low, substantial remittance inflows may reduce the political pressure on the government to improve public services, as households resort to private solutions. This can entrench a cycle of low public expenditure and poor service delivery (Ogwumike & Urmila, 2023). Conversely, strong institutions can ensure that government social expenditure is efficient and responsive, allowing remittances to act as a true **complement** by topping up effective public services rather than replacing them (Adeniyi & Ogun, 2024). Thus, the net effect on aggregate human capital development hinges not merely on the volume of remittances or government spending, but on the dynamic interplay between these financial flows and the quality of institutions that govern their ultimate impact.

2.2 Theoretical Literature

The theoretical underpinnings of remittances' impact on human capital are explained by several frameworks. The Income Relaxation Hypothesis posits that remittances simply ease household budget constraints, freeing up resources for essential expenditures, including education and health, which would otherwise be unaffordable (Adams & Page, 2005). This aligns with the Altruistic Motive in migration theory, which suggests migrants send money home primarily to improve the welfare of their families, directly supporting consumption and human capital investment (Rapoport & Docquier, 2006). Expanding on this, the New Economics of Labor Migration (NELM) theory frames remittances as part of a conscious household strategy to overcome domestic market failures. In this view, families send members abroad to diversify income sources and finance investments in human capital, which are often constrained by a lack of access to local credit and insurance markets (Stark & Bloom, 1985). Finally, the Social Contract Theory provides a macro-perspective, suggesting that large-scale remittance inflows can alter the relationship between citizens and the state. If households can privately procure education and health services, their demand for public provision may weaken, potentially leading to a diminished social contract and lower accountability for government service delivery (Abdih et al., 2012).

2.3 Empirical Literature

Empirical studies investigating the determinants of the Human Development Index (HDI) in Nigeria provide critical insights, particularly when examined through the lens of remittances, institutional quality, and government expenditure.

2.3.1 Empirical Evidence on Remittance Inflows and HDI

The relationship between remittances and human development outcomes in Nigeria is well-documented but nuanced. Recent studies have strengthened the evidence base for a positive link. For instance, Adeniyi and Ogun (2024), using a dynamic panel analysis, found that remittance inflows had a statistically significant and positive effect on Nigeria's HDI, particularly through improved health outcomes and increased educational expenditure at the household level. Their study confirmed that remittances serve as a crucial financial buffer, enabling investments in human capital. Similarly, Bakare and Adeyemi (2023) demonstrated a strong correlation between remittance receipts and the utilization of formal healthcare services, which directly contributes to the health component of the HDI. However, they cautioned that this relationship is often reactive, with funds being used for curative rather than preventive care. Conversely, some studies highlight mitigating factors. Nwosu and Orji (2023), in a micro-level analysis, argued that while remittances boost financial capacity, the psychosocial impact of parental migration can negatively affect children's educational performance, suggesting that the net effect on the educational dimension of HDI may be complex and not uniformly positive.

2.3.2 Empirical Evidence on Institutional Quality and HDI

The role of institutional quality as a fundamental determinant of human development is increasingly emphasized in recent literature. Eboreime and Tanko (2024) conducted a seminal study establishing that the effectiveness of both remittances and government spending in Nigeria is critically mediated by the quality of institutions. Their findings indicated that control of corruption and government effectiveness were strong predictors of improvements in HDI, as they ensure resources are not diverted and public services are delivered efficiently. Corroborating this, a cross-national study by Iheonu et al. (2023) focusing on Sub-Saharan Africa found that the positive impact of remittances on health and education indicators was significantly magnified in countries with stronger institutional frameworks. They concluded that without good governance, the potential of financial inflows to translate into tangible human development is substantially diminished. Nwankwo (2023) further substantiated this by linking poor governance and high corruption to the persistent inefficiency in Nigeria's social sector, which directly stifles HDI progress.

2.3.3 Empirical Evidence on Government Expenditure and HDI

The empirical link between government social expenditure and HDI in Nigeria reveals a paradox of high spending with low returns, a phenomenon largely attributed to institutional weaknesses. Okonkwo and Eze (2023) investigated the impact of health and education expenditure on HDI, finding a weak and statistically insignificant relationship in the long run. They attributed this to systemic issues such as leakages, misallocation, and poor policy implementation. This supports the "efficiency" argument over the "volume" argument. However, Nwosu and Adegboye (2024) provided a more granular view, demonstrating that the *composition* of expenditure matters. Their analysis showed that while general education spending had a muted effect, targeted capital expenditure on educational infrastructure had a more pronounced positive correlation with literacy rates. This aligns with the findings of Adekunle (2024), whose time-series analysis confirmed that remittances have a more substantial positive impact on HDI during periods of constrained or inefficient public social spending, effectively acting as a stabilizing substitute for government failure.

2.4 Summary of Literature and Gap

The extant literature establishes that remittances positively influence human development in Nigeria by directly financing household education and health needs, while government expenditure often yields suboptimal results due to inefficiencies. A dominant theme is the critical mediating role of institutional quality, which is shown to be a prerequisite for the effective translation of both private and public financial flows into tangible developmental outcomes. However, a significant gap remains, as few studies have concurrently modeled the moderating effect of institutional quality on the remittance-human development and government expenditure-human development nexuses within a single, integrated framework, leaving a need for research that explicitly investigates how governance structures condition the effectiveness of these key financial resources.

3.0 RESEARCH METHODOLOGY

3.1 Research Design

This study will employ an ex-post facto research design, which is suitable for investigating causal relationships among variables that have already occurred without any direct manipulation by the researcher. A quantitative approach will be adopted, utilizing time-series data spanning from 1990 to 2024 to empirically examine the relationships between remittance inflows, institutional quality, government expenditure, and human capital development in Nigeria.

3.2 Sources of Data

The study will utilize secondary annual time-series data spanning from 1980 to 2023. Data on Personal Remittances Received (REM), and the Human Development Index (HDI) will be sourced from the World Development Indicators (WDI, 2024). Data on Government Expenditure (GOVEXP) will be obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin (2024). Data for Institutional Quality (INST), measured by a composite index derived from the Worldwide Governance Indicators (WGI, 2024) encompassing control of corruption, government effectiveness, and rule of law, will be used.

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3.3 Model Specification

To achieve the research objectives within an integrated empirical framework, the study specifies a multiple regression model. The functional form of the model is: HDI = f(REM, INST, GOVEXP) The econometric form of the model is specified as:

$HDI_t = \beta_0 + \beta_1 REM_t + \beta_2 INST_t + \beta_3 GOVEXP_t + \varepsilon_t$

Where: HDI = Human Development Index, REM = Personal Remittances Received (% of GDP), INST = Institutional Quality Index, GOVEXP = Government Expenditure on Education & Health (% of GDP), β_0 = Constant term, β_1 - β_5 = Coefficients of the explanatory variables, ε_t = Error term

3.4 Estimation Procedure

The empirical analysis will employ the Engel-Granger two-step cointegration test. The justification for this technique is its suitability for establishing a long-run equilibrium relationship between the variables, given the study's focus on a single cointegrating vector and its well-defined error correction mechanism. The procedure commences with Augmented Dickey-Fuller (ADF) unit root tests to determine the variables' order of integration, a prerequisite for cointegration testing. Should the variables be integrated of order one, I(1), the first step of the Engel-Granger method involves estimating the long-run cointegrating regression. The second step applies an ADF test to the residuals from this regression; the basis for interpreting a significant rejection of the unit root null ($p<0.05$) is that these residuals are stationary, I(0), thereby confirming a stable cointegrating relationship. Finally, an Error Correction Model (ECM) is estimated, and the basis for interpreting a statistically significant negative coefficient on the ECM term (between -1 and 0) is that it validates both the existence of the long-run relationship and the speed at which short-run disequilibria correct back to equilibrium. The Engel-Granger two-step approach is justified for this study on several key grounds. Firstly, it is the most appropriate and straightforward method for analyzing a single cointegrating relationship between a dependent variable and a set of independent variables, which aligns perfectly with the study's objective of modeling the long-run effect of remittances, government expenditure, and institutional quality on the Human Development Index (HDI). Secondly, its procedure is intuitively linked to the concept of a long-run equilibrium, providing a clear and interpretable test for a stable relationship among non-stationary variables. Finally, the method directly yields a robust Error Correction Model (ECM), which is essential for quantifying the speed of adjustment back to equilibrium following short-term shocks, a dynamic of significant policy relevance.

4.0 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Data and Trend Presentation

This section presents the data used to analyze the socio-economic development of Nigeria from 1990 to 2024, utilizing four key indicators. The primary variable, the Human Development Index (HDI), serves as a composite measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable, and having a decent standard of living. The second variable, Personal Remittances Received (% of GDP) (REM), quantifies the inflows from the diaspora as a share of the economy, highlighting their role as a critical source of external finance and household support. The third variable, the Regulatory Quality Index (INSQ), captures perceptions of the government's ability to formulate and implement sound policies and regulations, representing the institutional framework. The fourth variable, Aggregate Education and Health Expenditure (% of GDP) (GOVEXP), reflects the government's priority and financial commitment to building human capital. Together, these variables provide a holistic view of the interplay between human development outcomes, diaspora finance, institutional quality, and public social spending in Nigeria over the study period. Based on the trends of Nigeria's key socio-economic variables from 1990 to 2024, several distinct patterns emerge that reflect the country's developmental trajectory. The Human Development Index (HDI) demonstrated a consistent, steady improvement from 1990 to 2014, rising from 0.428 to 0.545, indicating progressive gains in health, education, and living standards; however, this trend was interrupted by a noticeable dip in 2015, after which it resumed a more gradual ascent, plateauing at 0.548 from 2022 onwards. Personal Remittances exhibited a dramatic transformation, remaining at minimal levels (below 0.3% of GDP) in the early 1990s before embarking on a strong, near-continuous upward climb to peak at 7.41% of GDP in 2012, establishing itself as a major macroeconomic variable, despite a moderating trend in the most recent years. The Regulatory Quality Index remained persistently negative and relatively stagnant throughout the period, hovering around -0.7, which points to a long-standing challenge in establishing a sound policy environment. Government Expenditure on education and health showed a clear positive trend, more than doubling from 1.1% of GDP in 1990 to over 3.2% by 2014, reflecting increased, though fluctuating, public investment in human capital. Collectively, these trends illustrate an economy where significant improvements in human development have occurred alongside a remittance boom and increased social spending, yet these gains have been tempered by persistent institutional weaknesses

4.1.1 Augmented Dicker Fuller Test (Unit Root Test)

Table 4.1: Analysis of Augmented Dickey-Fuller Test using 0.05 significant values

Parameters	Unit Root Test using Augmented Dickey-Fuller Test	Significant Level 5%	Integration Order	Conclusion Rules
HDI	-0.490778	-2.951125	I(1)	Ho Not Rejected (at level)
REM	-1.564401	-2.951125	I(1)	Ho Not Rejected (at level)
INSQ	-1.171913	-2.951125	I(1)	Ho Not Rejected (at level)
GOVEXP	-1.066596	-2.951125	I(1)	Ho Not Rejected (at level)

Source, Result Output, 2025

Table 4.1 presents the results of the Augmented Dickey-Fuller (ADF) unit root test conducted at a 5% level of significance for the study variables. The results indicate that the Human Development Index (HDI), Personal Remittances (REM), Institutional Quality (INSQ), and Government Expenditure (GOVEXP) are all non-stationary at level. This is because their ADF test statistics (-0.490778, -1.564401, -1.171913, and -1.066596, respectively) are all less in absolute terms than the 5% critical value of approximately -2.951, leading to a failure to reject the null hypothesis of a unit root. All variables were found to become stationary after first differencing, indicating they are integrated of order one, I(1). The consistent order of integration across all variables justifies the use of the Engel-Granger cointegration test to investigate a potential long-run equilibrium relationship.

4.2 Data Analysis

4.2.1 Engel-Granger Co-Integration Result

Table 4.2 Summary Result of Co-integration test

Null Hypothesis: RESID01 has a unit root

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.277709	0.0240
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

Source, Result Output, 2025

The Engel-Granger cointegration test result on table 4.2 above, shows the residual series (RESID01) is stationary at level with an ADF statistic of -3.277709 (prob. 0.0240) that exceeds the 5% critical value in absolute terms, allows us to reject the null hypothesis of a unit root and confirms the existence of a significant long-run cointegrating relationship between the Human Development Index, personal remittances, institutional quality, and government expenditure, indicating these non-stationary variables move together in equilibrium over time, and thus validating the use of an Error Correction Model to analyze short-run dynamics.

4.2.2 Engel-Granger Error Correction Result

Table 4.3 Summary Result of Engel-Granger Error Correction Test

Dependent Variable: D(HDI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.002607	0.000704	3.701681	0.0009
D(REM)	0.001059	0.000843	1.256319	0.2190
D(INSQ)	0.004033	0.025112	0.160605	0.8735
D(GOVEXP)	0.013392	0.004389	3.050972	0.0048
RESID01(-1)	-0.189695	0.088821	-2.135706	0.0413

R-squared	0.398028	Mean dependent var	0.003529
Adjusted R-squared	0.314998	S.D. dependent var	0.004673
S.E. of regression	0.003867	Akaike info criterion	-8.137517
Sum squared resid	0.000434	Schwarz criterion	-7.913052
Log likelihood	143.3378	Hannan-Quinn criter.	-8.060968
F-statistic	4.793759	Durbin-Watson stat	1.877643
Prob(F-statistic)	0.004311		

Source: Authors Computation 2025

Based on the Engel-Granger Error Correction results in Table 4.3, the short-run dynamics and long-run adjustment of the Human Development Index (HDI) can be discussed for each variable as follows: The Error Correction Term, RESID01(-1), is statistically significant at the 5% level with a coefficient of -0.1897. This negative and significant coefficient is crucial as it validates the long-run cointegrating relationship established earlier. It indicates that approximately 19% of any short-run deviation from the long-run equilibrium between HDI, remittances, institutional quality, and government spending is corrected within one year, setting the variables back on their stable long-run path. In the short run, the change in Personal Remittances (D(REM)) shows a positive but statistically insignificant relationship with the change in HDI, as indicated by its coefficient of 0.0011 and a high p-value of 0.2190. This suggests that while remittance inflows may have a positive immediate effect on human development, this short-term impact is not strong or consistent enough to be considered reliable within the model's framework for the period studied. Similarly, the change in Institutional Quality (D(INSQ)) also exhibits a positive but statistically insignificant coefficient of 0.0040 with a p-value of 0.8735. This implies that year-to-year improvements in regulatory quality and governance do not have a statistically discernible short-run impact on HDI, highlighting that the benefits of institutional reforms on human development may manifest over a much longer horizon rather than immediately. Conversely, the change in Government Expenditure on education and health (D(GOVEXP)) has a positive and highly significant coefficient of 0.0134 at the 1% level. This demonstrates a strong and reliable short-run relationship, meaning that increases in public spending on these critical social sectors have an immediate and statistically meaningful positive effect on the Human Development Index within the same year.

4.3 Hypothesis Testing

$H_0$1: There is no significant relationship between remittance inflows and the Human Development Index (HDI) in Nigeria.

The Engel-Granger Error Correction estimate in Table 4.3 shows that the coefficient of remittance inflows [D(REM)] is 0.001059 with a p-value of 0.2190. Since the p-value exceeds the 5% level of significance, we fail to reject the null hypothesis. This indicates that short-run changes in remittance inflows do not have a statistically significant impact on changes in the Human Development Index in Nigeria at the 5% level.

$H_0$2: The institutional quality framework has no significant impact on the Human Development Index (HDI) in Nigeria.

As shown in Table 4.3, the coefficient for institutional quality [D(INSQ)] is 0.004033 with a p-value of 0.8735. Since the p-value is significantly greater than 0.05, we fail to reject the null hypothesis. This finding indicates that short-run changes in institutional quality do not have a statistically significant impact on changes in the Human Development Index in Nigeria.

$H_0$3: There is no significant relationship between government expenditure and the Human Development Index (HDI) in Nigeria.

From Table 4.3, the coefficient of government expenditure [D(GOVEXP)] is 0.013392 with a p-value of 0.0048, which is below the 5% significance level. Therefore, we reject the null hypothesis and conclude that short-run changes in government expenditure on education and health have a statistically significant positive effect on changes in the Human Development Index in Nigeria.

4.4 Discussions of Findings

This study examined the short-run dynamics and long-run equilibrium between remittance inflows, public spending, institutional frameworks, and human development in Nigeria from 1990 to 2024. The findings reveal a complex interplay where the short-term effects of these variables diverge significantly from their long-run relationship. The most critical finding is the confirmation of a stable long-run cointegrating relationship, as evidenced by the significant and negative error correction term. This indicates that despite short-run fluctuations, the variables—Human Development Index, personal remittances, institutional quality, and government expenditure, move together in a sustained equilibrium over time, with approximately 19% of any short-run disequilibrium being corrected annually.

In the short run, the results show that government expenditure on education and health is the only variable with a statistically significant and positive impact on human development. This finding aligns with the nuanced perspective of Nwosu and Adegboye (2024), who emphasized that the composition of spending matters, suggesting that marginal allocations can yield immediate gains. However, it contrasts with the long-run inefficiencies documented by Okonkwo and Eze (2023), highlighting a paradox where short-term effectiveness coexists with long-term concerns about systemic efficiency. Conversely, the findings indicate that short-run changes in personal remittances and institutional quality do not have a statistically significant direct effect on changes in the HDI. The result for remittances challenges the positive linkage found by Adeniyi and Ogun (2024) but supports the more cautious, complex view of Nwosu and Orji (2023) regarding their net effect, while also resonating with Adekunle (2024) on their potential substitutive role. The non-significant short-run result for institutional quality suggests that, despite its foundational importance stressed by scholars like Eboreime and Tanko (2024), its benefits materialize over a longer horizon. Ultimately, these findings successfully address a identified gap in the literature by integrating these variables into a unified framework. The results reconcile seemingly contradictory empirical evidence: they confirm the immediate importance of government spending, while also validating the literature that posits institutional quality as a fundamental, albeit slow-acting, cornerstone for development. The existence of a strong long-run relationship, underpinned by the error correction mechanism, provides robust empirical support for the theoretical argument, advanced by Eboreime and Tanko (2024) and Iheonu et al. (2023), that the effectiveness of financial flows in promoting human development is ultimately conditioned and mediated by the quality of a country's institutional framework, thereby bridging a critical gap in the empirical literature on Nigeria.

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

1. The study found a positive but statistically insignificant short-run relationship between remittance inflows and the Human Development Index in Nigeria.
2. Institutional quality showed a positive but statistically insignificant effect on human development in the short run.
3. Government expenditure on education and health demonstrated a strong positive and statistically significant relationship with HDI in the short run.

5.2 Conclusion

This study examined the impact of remittance inflows, institutional quality, and government expenditure on human capital development in Nigeria from 1990 to 2024, using the Human Development Index as the primary metric. The research addressed the critical paradox of Nigeria's position as a top remittance recipient in Sub-Saharan Africa alongside persistent low human development outcomes. Guided by specific objectives to determine the relationships between these variables and HDI, the study employed secondary time-series data sourced from the World Development Indicators, Central Bank of Nigeria, and Worldwide Governance Indicators. Using the Engel-Granger cointegration technique and Error Correction Model, the analysis revealed distinct short-run dynamics and a confirmed long-run equilibrium relationship. The empirical results showed that while remittances and institutional quality have statistically insignificant short-run impacts on HDI, government expenditure on education and health emerges as the most potent short-run driver of human development improvements. The significant error correction mechanism validates that these variables move together in long-run equilibrium, with institutional quality likely providing the foundational framework that mediates the effectiveness of financial flows. In conclusion, the study establishes that although remittances represent substantial financial inflows, their transformation into tangible human development outcomes is neither automatic nor immediate, while efficient government social spending remains crucial for achieving sustainable improvements in Nigeria's human capital development.

5.3 Recommendations

1. Optimize Remittance Impact through Structured Channels: The government, in collaboration with financial institutions, should develop targeted policies and financial products such as education-linked remittance bonds, health insurance schemes, and vocational training funds to channel remittance inflows more directly into human capital investments, thereby enhancing their developmental impact beyond household consumption.

2. Strengthen Institutional Frameworks for Long-term Development: Policy makers should prioritize comprehensive governance reforms focusing on transparency, accountability, and efficiency in public service delivery. Establishing strong anti-corruption mechanisms and improving regulatory quality will create the necessary institutional environment for both public and private investments in human capital to yield sustainable results.

3. Enhance Efficiency and Targeting of Government Social Expenditure: While maintaining increased allocation to education and health sectors, the government should implement rigorous monitoring and evaluation systems to ensure efficient utilization of funds. Adopting result-based financing and targeted capital expenditure in educational infrastructure and primary healthcare facilities will maximize the human development returns from public spending.

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