Impact of foreign remittances on poverty reduction in Nigeria (1986-2020)

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Abstract

In an era of declining Official Foreign Assistance (OFA) to the developing nations, remittances have become alternative source of foreign finance to these economies. This study focused on the impact of foreign remittances on poverty reduction in Nigeria (1986-2020). The specific objectives were; to determine the impact of remittances on poverty reduction in Nigeria; to examine the causality relationships between remittances and poverty reduction in Nigeria. Utilizing secondary data from the Central Bank of Nigeria and the world Bank, It employed the Vector Error Correction Model (VECM), using Household Consumption Expenditure as the dependent variable, while remittances, per capita income, life expectancy and real Exchange Rate as the independent variables. The findings revealed that remittances have statistically insignificant impact on poverty reduction in Nigeria at t–statistic (0.09124) > (0.05) significant level. Furthermore, there is causality relationship between remittances and poverty reduction in Nigeria. The study therefore recommended that government should priotize diaspora investments in the form of technical assistance, over and above other investment facilities such as national and state bonds, treasury bills, etc to attract real development in human capital and infrastructure which can accelerate economic growth, job creation and poverty reduction in Nigeria faster.

Keywords: Foreign remittance, Poverty reduction, Household consumption expenditure

1.1 Background of the Study

In the face of dwindling government revenue, mounting debt challenges and declining foreign direct investment inflows, any increase in remittances into Nigeria has become a coveted outcome that migration attracts to the nation's economy. Remittances are crucial to Nigeria's efforts to increase its human capital base and consequently, lower the nation's poverty rate. The term "international remittances" basically describes the products and cash that migrant workers from abroad send home to their families. World Bank (2022) [53] reported that remittances to Nigeria accounted for 38 per cent of total remittances to the Sub-region, an increase by 3.3 per cent to $20.1billion. The report further stated that remittance flows to the Sub-Saharan Africa nearly doubled over Foreign Direct Investments (FDI) at the same period.

In recognition of the declining foreign direct investment (FDI) and official foreign assistance (OFA) flows into developing countries, causing a serious gap and crisis in government finance and economic outlook as a result of the 2007/2008 financial crises, foreign remittances have become a vital alternative source of foreign finance (Onyike Ikeagwu and Alamba, 2020). Omotola (2021), highlighted a growing interests in diaspora skills and experience and how these can be sought for national development. In other words, the need to devote a portion of professional lives to provide services in home countries, especially in specialized and emerging professions -where there are significantly insufficient competences such as in research and development, information technology and artificial intelligence which hold great potentials to generate wealth and pull many Nigerians out of poverty can best be described as remittances. The developmental impact of remittances in improving human capital as well as reducing poverty levels is not arguable. For instance, Nigerian diaspora communities collaboratively build schools and hospitals, and equip them to help provide educational and health services to the local population, especially where such services could not be provided by the government due to paucity of funds.

As cited in Hines and Simpson (2018) [19], Yang (2011) [54] noted that whether remittances are used for consumption or investment may depend on the income level of the household. While poor households are likely to spend more on food and material goods, wealthier households can afford to invest in physical and human capital. Not only that remittances help in meeting consumption, healthcare and educational expenses, it also helps the recipient households invest in some business that improve their living standard. Therefore, remittances transmitted homeward, subsidizes for the relatives, thereby alleviating their poverty level.

Certain factors are responsible for causing extreme poverty in the country. These include economic, social-cultural, religious, political, among others which consequently compel many Nigerians to migrate outside the shores of the country for better opportunities of quality living. These factors can be categorized under the Push and Pull factors as asserted by Thet (2016). The key Push factors of migration by Nigerians occur due to lack of

job opportunities, political victimization, poor economic well-being, conflict, extreme religious practices, racial intolerance and ethnic discrimination, etc. On the other hand, the Pull factors of migration occur when there are better opportunities elsewhere for employment, high wages, better working conditions, attractive amenities, better opportunities for education and skill development among others. World Bank (2022) [53] stated that harnessing migration for economic progress and poverty reduction requires addressing the underlying causes of migration. In order to maximize human mobility for economic growth and poverty reduction, it is therefore imperative to address the fundamental causes of migration.

1.2 Statement of the problem

Poverty challenges in Nigeria seem to have become so intractable that, despite the several programmes such as National Poverty Eradication Programme (NAPEP), National Economic Empowerment Development Strategies (NEEDS), SUREP, etc. and the enormous resources, both human and material, that have been committed to its eradication by governments, organizations and individuals, much is yet to be desired. Due to the severe poverty prevailing in Nigeria, the World Bank (2016) report infamously declared the country, the Poverty Capital of the World.

One of the major consequences of unabated poverty in Nigeria is external migration. Adedokun and Karzanova (2021) [6] argue that the healthiest, most educated and most potentially economically active men and women leave the country in a bid to escape economic hardship, poverty and social injustice. World Bank (2022) [53] stated that harnessing migration for economic progress and poverty eradication requires addressing the underlying causes of migration. A rise in remittances into Nigeria is one of the advantages of migration to the nation's economy. Remittances are financial resources transferred by migrants to their families and other recipients in their home country. In Nigeria, remittance inflows have grown substantially over the years and have become an important source of foreign exchange and household income. At the household level, remittances can potentially reduce poverty by increasing disposable income, improving consumption, financing education and healthcare, supporting small-scale businesses, and providing resources for investment. At the macroeconomic level, remittances may contribute to economic stability and development by supplementing domestic income and foreign exchange earnings. Furthermore, the benefits of remittances may vary across households and regions depending on access to financial institutions, employment opportunities, education, and other socioeconomic conditions (Nnamani, 2024). However, the extent to which these inflows have actually contributed to poverty reduction in Nigeria remains an important empirical question (Chukwuenye, 2021).

The period from 1986 to 2020 is particularly of interest because it covers several major economic and social changes in Nigeria, including structural adjustment policies, periods of economic recession, exchange-rate reforms, increased international migration, and substantial changes in remittance flows. During this period, Nigeria experienced both increases in remittance inflows and persistent poverty challenges (Okowa, 2024). This raises the question as to whether remittances have played any role in reducing poverty or whether their effect has been insufficient to address the structural causes of poverty in the country. Although several studies have examined the relationship between remittances and poverty, findings have not been entirely conclusive, particularly with respect to Nigeria over a long period. Some studies suggest that remittances improve household welfare and reduce poverty, while others argue that their impact may be limited or dependent on prevailing macroeconomic and socioeconomic conditions. There is therefore a need for an empirical investigation on the relationship between remittances and poverty reduction in Nigeria, particularly over the period 1986–2020.

1.4 Objectives of the study

This study will be guided by the following objectives

- To determine the impact of remittances on poverty reduction in Nigeria.
- To examine the causality relationships between remittances and poverty reduction in Nigeria.

1.5 Hypotheses of the study

The hypotheses to be tested in this study include:

- **Ho_1:** Remittances have no impact on poverty reduction in Nigeria.
- **Ho_2:** There is no causality relationships between remittances and poverty reduction in Nigeria.

2.2 Literature review

2.1.1 Poverty

Hunger, a lack of affordable housing, bad health, a lack of education, the inability to read and comprehend, unemployment, a high rate of child mortality, and living in constant fear are all considered forms of poverty, according to the World Bank (2001). It denotes a basic incapacity to engage in meaningful social interactions (UNDP, 2010). The common understanding of poverty is that people are unable to meet their basic needs, which include clothes, food, and shelter. Severe deprivation of fundamental human needs, such as lack of access to safe drinking water, health care, education, and social services, is what defines this situation. This deficiency is seen in the lack of finance and lack of access to basic services, (Todaro and Smith, 2006). Poverty is further seen as deprivation which is not only limited to material income needed to maintain the basic necessities of life but also non material aspects like: vulnerability, noiselessness, powerlessness and mental disposition (World Bank, 2001). The OECD (2006) cited in Aiyedogbon and Ohwofasa (2012) defined poverty as the interlinked forms of deprivation in the economic, human, political, sociocultural and protective spheres. Aderonmu (2010) cited in Taiwo and Agwu (2016) defined poverty as lack of command over basic consumption

needs. For the purpose of this research, poverty is a condition of helplessness, dependence and lack of access to formal education, health as well as financial services such as a bank account, or the use of credit and saving facilities and self-respect on the part of the affected individuals.

2.1.2 Poverty reduction

As defined by the percentage of the population living below the poverty line, Efforts to reduce the magnitude of poverty are referred to as poverty reduction. Ajakaiye and Adeyeye (2000) stated that poverty reduction encompasses not only the short-term relief and basic needs satisfaction but also the development of strategies for increasing the long-term goals. They viewed poverty as the outcome of inefficient use of common resources which are consequences of weak policy environment, inadequate infrastructure, weak access to technology, credit etc. Ogwumike (2002) [35] posited that the strategies should be in form of policies of government that intend to broaden the opportunities available to the poor and ensure that every citizen has access to the basic needs of life such as food, shelter, water, health, education and minimum income. Thus, poverty reduction involves improving the living standard or condition of the poor using policies and programmes, aimed at broadening the opportunities available to the poor and ensuring that every citizen has access to the means of livelihood such as food, services, nutrition, basic education and medical care services. According to Chaudhuri (2022) [11] much needs to be done to help lift millions of Nigerians out of poverty, including boosting health and education, bolstering productive jobs, and expanding social protection. The World Bank (2022) [53] suggested at least three types of deep, long-term reforms to foster and sustain pro-poor growth and raise Nigerians out of poverty. These include: i. macroeconomic reforms (including fiscal, trade, and exchange rate policy); ii. policies to boost the productivity of farm and non-farm household enterprises; and iii. improving access to electricity, water, and sanitation while bolstering information and communication technologies.

2.1.3 Remittance

Remittances are generally defined as that portion of migrants' earnings sent from the migration destination to the place of origin. Although they can also be sent in kind, the term "remittances" usually refer to monetary and other cash transfers transmitted by migrant workers to families members back home. Remittance however, can be inform of money, assets or informal or in non-monetary forms. Non-monetary forms include clothing, medicine, gifts, tools, and equipment. Yoshino, Taghizadeh-Hesary & Otsuka (2017) [56] refers international remittances as the money and goods that are transmitted to households by migrant workers from outside of their countries of origin.to reduce poverty (Ratha, 2013). Also, Asquith and Opoku-Owusu (2021) [7], cited in Wanger and Aras (2022) corroborated that diaspora investments could take any of philanthropy, remittances, direct investment, and portfolio investment which are central in the blended finance for development. They further opined that governments, private sector, and the diaspora themselves should recognize their centrality in the development financing mix of their countries. Blouchoutzi and Nikas (2014) argue that remittances naturally come from migration as basic gains and compensations to the emigrant countries for losing part of their labour force.

Anyanwu and Erhijakpor (2010) argued that remittances, especially through migrant associations, may also contribute to the creation of new social assets and services and community physical infrastructures such as schools, health centers, roads and other community projects to improve the quality of live in their communities of origin. In addition to improving on the balance of payments of many developing countries, the authors further argue that workers' remittances exert a positive impact on the exchange rate as well as promoting economic growth, through their direct effects on savings and investment (human and physical capital) and indirect effects through consumption. The study, however, limits itself to external remittances only. Despite the rapid increase in remittance in Nigeria, there is much gap in fulfilling the macroeconomic goals; the rate of poverty incidence is still mind boggling for the citizens.

2.2 Theoretical literature

2.2.1 Classical theory of remittances

Ravenstein (1889) [37], in his "laws of migration" saw migration as an inseparable part of development, and he asserted that the major causes of migration were economic. The Classical theorists view industrialization from the dimension of attracting cheap labour, in which the developed countries' demand for labour from the developing countries is meant to fill the existing labour market gap in order to keep their industries and economies running. Consequently, a point is reached when the transfer of knowledge, skills and earnings, through migrant labour assimilation results to the exchange and transmission of such knowledge, skill and wealth from the developed countries to developing countries which end up meeting the family, community and national needs of the countries of origin of the migrants.

The Classicists also believe that modern knowledge, ideas, innovation, rational and ideology needed to grow the developing economies come from developed economy. Hence, the exposure of the traditional economy to acceleration stage involves the transfer of knowledge, skills and wealth which are a result of migration. In a way, the Classical school supports remittance or migration because it is seen as an avenue that would promote cultural, political, religious, ideological and socio-economic exchanges between the developed and the developing countries through building industries as well as human capacity for mutually sustainable flow of resources from the latter to the former and thus reduce poverty in the periphery.

2.2.2 Neo-classical theory of remittances

Castles & Miller (2003) argue that economic and political power is unequally distributed among developed and

underdeveloped countries, that people have unequal access to resources, and that capitalist expansion has the tendency to reinforce these inequalities. Instead of modernizing and gradually progressing towards economic development, underdeveloped countries are trapped by their disadvantaged position within the global geopolitical structure. This school of thought posited that the marginal productivity of labour cum domestic wage will increase when labour migrate. Migration is as a result of shortfall in workforce in the source country, which if not filled, will raise the demand for labour beyond its supply. Whereas Neoclassical views migration as a way of establishing a balance in terms of the benefits of migration between the developed and developing economies due to wage differentials. Subsequently, increased wages for migrant workers will transform into remittances to the country of origin thereby improving the welfare of the people at home. Balasubramanyam, Salisu and Sapsford (1999) [9] and Makki and Somwaru (2004) [24] cited in Udah, (2011) [48] argue that foreign transfers show how the level of human capital stock affects the absorptive capacity of an economy and consequently, the positive effects of capital inflows such as FDI and remittances on economic growth and development. The Neo-classical theorists are also of the view that through a policy of large-scale capital transfer and industrialization, poor countries would be able to jump on the bandwagon of rapid economic development and modernization. The Neo-classical theory is supported by [Apademetriou (1985), Arnold (1989), Stark and Taylor (1989), Kubursi (1992), Stalker (2000)].

2.3 Empirical literature

Akanle & Adesina, (2017) in a paper titled: International Migrants' Remittances and Kinship Networks in Nigeria, found that remittances affect migrants' kinship networks, patterns of family interactions, obligations, and expectations in the households left behind as kin attach meaning to remittances and construct values from them in ways that ultimately make remittances more intertwined and complex. It employed the survey method on cross sectional data gathered in 2015 and 2016, to examine the relationship between international migrants' remittances and their kinship networks at home beyond near-linear economic impacts. It concluded that there is a positive relationships between remittances and household well-being in developing countries.

Iyemifokhae (2020) investigated the effect of remittances on Nigerian household poverty. It primarily focused on the effects of various forms of remittances, such as cash, food, and otherss on household poverty, with a particular emphasis on rural and urban regions within Nigeria's six geopolitical zones. The mean per capita expenditures of remittance-receiving families were estimated in the study using the Ordinary Least Squares (OLS) method. The Heckman two-stage estimate method was also used to investigate the impact of endogeneity. It was discovered that the North Central, South East, and South West regions, as well as rural and urban areas, were more affected by total, cash, food, and other remittances on household poverty.

Huay & Bani (2018) [20] used the Generalized Method of Moments to examine the link between remittances and poverty in 54 developing nations through the human capital channel. According to the findings, education moderates the impact of remittances' reduction of poverty. The degree of education has a negative correlation with the marginal effect of remittances, suggesting that education reduces the impact of remittances on poverty. When determining the optimal distribution of available resources between these two goals, it is helpful to determine if and how remittances and human capital interact in their impact on poverty. The study discovered little data about the connection between poverty and remittances in emerging nations and human capital. Unlike previous research that have employed conventional panel estimators, this one is unique.

Wanger & Aras (2022) used the Ordinary Least Squares approach across a thirty-nine-year time series, or from 1981 to 2019, to explore the effect of remittances on the development of human capital in Nigeria. Human capital development and diaspora remittances were found to have a positive and substantial causal link. A family educational endowment fund should be established and financed by a percentage of diaspora remittances. A state of emergency on education should be declared, particularly by ensuring transparency in both government and private spending on education, especially by recipients of diaspora remittances. Other policy recommendations include the establishment of diaspora foundations through the diaspora commissions to cater for the needs of dependents of Nigerian emigrants, especially providing their educational and healthcare needs.

Onyike, Ikeagwu & Alamba (2020) investigated the effect of international remittances on the economic growth in Nigeria for the period covering 1986 to 2017. The VECM was adopted to determine the long run and short run relationships among economic growth, remittances, gross domestic investment, Interest rate and inflation rate. Findings indicated that in the long run remittances, human capital and inflation rate had positive effect while GDI and interest rate had negative effect on the economic growth in Nigeria. In the short run remittances, human capital, GDI and inflation rate had positive effect while interest rate had negative effect on the economic growth in Nigeria. In view of the findings the study amongst others recommend that Government should put in place facilities and incentives that will make remittances easier using the formal channel, also the introduction of new savings instruments as well as providing information on investable opportunities available in Nigeria will ensure remittance are put into productive use.

Hassan, Mehmood & Hassan (2013) [18] investigated the consequences of worker remittances on human capital formation in Pakistan. Using the Autoregressive Distributed Lag (ARDL) Bounds Testing Approach from the period of 1981-2011. This study found that worker's remittances have an adverse impact on human capital formation. It also found that one important justification for the deteriorating impact of worker's remittances on human capital formation is the negligence of parental care. Particularly, the absence of father or any other close relative from home leads to situations where there can be no checks on the outside home activities of the children. Also, the cultural constraints in the country restrict

mothers or any female member of the household to go outside to look after their children's activities. Therefore, the study concluded that the positive impact of worker's remittances in the form of inflow of income is offset by the adverse impact of negligence of the parental care and hence, human capital is showing adverse performance rather improving.

2.4 Gap in literature

Several empirical researches have been conducted thus far, with the aim of examining the impact of remittances on poverty reduction in Nigeria. Some of which include Akanle & Adesina, (2017), Onyike, Ikeagwu & Alamba (2020), Wanger & Aras (2022) and numerous others. Mostly, these researchers employed the income technique, inequality criterion, gender inclusiveness, literacy rates, standard of living or well-being, etc. as variables to establish the relationship between human capital development and poverty reduction in Nigeria.

However this research work, has found out that not much work has been covered to show that improvements or otherwise in remittances affect household consumption expenditure, which is a major indicator of poverty level in Nigeria. It is in view of that that this research incorporated household consumption expenditure as a factor that influences poverty level through remittances inflow into the country.

3. Methodology

This research adopts the *Ex-Post Facto* research design. In this context, the word "after the fact" or "retrospectively" refers to those investigations which study probable cause-and-effect link by examining an existing situation or state of things and seeking back in time for plausible causative elements. In this type of design, the independent variable or variables have already occurred and in which the researcher starts with the observation of a dependent variable or variables (Kerlinger, 1970). A causal relationship between the dependent and independent variables is established using this kind of design. The researcher has no control over the variables under study simply because they have already been manipulated before they were applied in this study. From the foregoing, this present study investigated and anchored its analysis on already published data. Therefore, *Ex-post Facto* research design is best suited for this study. Times series data were collected for the period between 1986 and 2021.

3.1 Model specification

HCE = (REMGDP, KPC, LIFEX, EXRAT)……3.2

The econometric form of the model was specified as:

$HCE=\beta_0+\beta_1 REMGDP_t+\beta_2 KPC_t+\beta_3 LIFEX_t+\beta_4 EXRAT_t+\mu_{t...}$ 3.3

Where,

HCE_t is the Household Consumption Expenditure at the current period.

$REMGDP_t$ represents the amount of remittances as a percentage of GDP at the current period.

$kPCI_t$ is the Change in per capita income at the current period.

$Lifex_t$ is the life expectancy at the current period.

$EXRAT_t$ is the real Exchange Rate at the current period.

A priori expectations

$F(\beta_1)<0; F(\beta_2)<0; F(\beta_3)<0$.

4. Presentation of results

Ahead of the time series econometric analysis, a detailed analysis was carried out to determine the trend movements of the variables. The complete data set consists of 35 years of annual observations from 1986 to 2020 on the selected variables.

Table 1: Descriptive statistics result

	HCE	Remgdp	Lifex	EXRAT	Kpci
Mean	142.0757	2.956286	56.4769	12.42771	47.95384
Median	411.9600	8.330000	47.50000	7.720000	0.075000
Std. Dev.	137.1157	2.480025	813.7727	15.02444	319.8572
Skewness	0.634246	0.352017	5.659320	2.047900	5.553644
Kurtosis	1.827735	1.848143	33.02843	2.3113363	32.3363
Obserations	35	35	35	35	35

Source: Eviews 9.0

The table shows descriptive statistics of the variables. In the model established in the study, there is one dependent variable and four independent variables. These variables consist of Household consumption expenditure (HCE), Ratio of remittances to the GDP (Remgdp), Life expectancy (Lifex), Exchange rate (EXRAT) and Change in per capita income (Kpci), respectively.

4.1 Unit root test

The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were used to test for the unit root in the individual variable. The tests were done based on the following hypothesis;

H_0: variable is non-stationary.

H_1**:** variable is stationary.

Table 2: Augmented dickey-fuller and phillips-perron unit root tests

Variables	ADF Test Statistics	5% Critical Value	PP Test Statistics	5% Critical Value	Order of integration
HCE	-4.751411	-1.95502	-3.686974	-3.552973	I(1)
REMGDP	-5.825233	-3.552973	-7.273553	-3.552973	I (1)
KPC	-9.491055	-3.552973	-19.59294	-3.562882	I(1)
LIFEX	-9.489919	-3.552973	-34.28309	-3.552973	I(1)
EXRAT	-1.79E+13	-3.603202	-18.72358	-3.552973	I(1)

Source: E-View 9.0

The table above showed that all the time series are stationary of Order I(1) at 5% critical value. It signified that all the variables are stationary of the First Order for both ADF and PP Tests respectively. We now move on to test for the Co-integration to see if they are related in the long run.

4.1.2 VECM lag order selection criteria

In order to confirm the existence of Co-integration, we embark on Lag Order Selection mechanism to know the number of lag to use to test for Co-integration. The result of Lag Order Selection criterion is presented in the appendix.

Table 3: VECM Lag Order Selection

Included observations: 34

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-872.6852	NA	11.315	51.68737	51.95672	51.77922
1	-770.9214	161.6250*	24.13*	47.81890*	49.70441*	48.46191*

Source: E-view 9.0

From the lag order selection test above, we chose lag One (1) since all the lag selection criteria (LR, FPE, AIC, SC and HQ) fall within Lag 1.

4.2 Co-integration test

From table 2 above, both the ADF and PP tests showed that all the variables are cointegrated of Order (1) at a 0.05 Significance level. Therefore, the Johansen Tests were conducted.

Ho = There is no co-integration (no long run relationship among Variables).

Table 4: Co-integration test result

Date: 02/05/24 Time: 18:19				
Sample (adjusted): 1988 2020				
Included observations: 33 after adjustments				
Trend assumption: Linear deterministic trend				
Series: HCE, LOGEDUEX LOGHELEX REMGDP KPC LIFEX EXRAT				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized	-	Trace	0.05	-
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob. ****
None *	0.998298	357.3290	125.6154	0.0000
At most 1 *	0.876817	146.9193	95.75366	0.0000
At most 2 *	0.587058	77.81467	69.81889	0.0100
At most 3 *	0.517181	48.62790	47.85613	0.0422
At most 4	0.351924	24.60019	29.79707	0.1762
At most 5	0.197668	10.28653	15.49471	0.2593
At most 6	0.087420	3.018837	3.841466	0.0823

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level; *Denotes rejection of the hypothesis at the 0.05 level;
**MacKinnon-Haug-Michelis (1999) *p*-values

Source: E-view 9.0

The Trace and Maxi-Eigen statistic of the Johansen Tests in the table 4 above were utilized to show the cointegrating relationships among the variables. The test revealed at least 4 cointegrating equations among the variables suggesting that there is Co-integration among the variables at 0.05 significant level, indicating long run relationship. On the other hand, the Max-Eigen statistics at 'None' and "At Most 1" showed 2 cointegrating equations. Therefore, we can reject the null hypothesis that at "None" and "At Most 1" that there is no long run relationship among the variables. The presence of cointegration implies that the variables share a common stochastic trend.

4.3 Vector Error Correction Model (VECM)

Table 5: Vector Error Correction Model Result

Dependent Variable: HCE			
Date: 02/05/24 Time: 14:58			
Sample (adjusted): 1989 2020			
Included observations: 32 after adjustments			
Variables	**Coeficient**	**Std. error**	**t-statistic**
C	4.958199	6.17889	0.80244
REMGDP (-1)	-0.384782	4.21719	-0.09124

KPC (-1)	-0.009090	0.01542	-0.58932
LIFEX (-1)	0.005828	0.00663	0.87968
EXRAT (-1)	-0.195723	0.33828	-0.57858
ECM-1	-0.001481	0.00287	-0.51561

***Source*:** E-views 9.0

The result of the vector error correction estimate represents the model for the impact of remittances on poverty reduction in Nigeria. While remittances are represented by the ratio of remittances to the GDP (REMGDP), household consumption expenditures (HCE) on the other hand, represents the level of poverty reduction in Nigeria. The empirical result shows that an increase in remittance (RemGDP) led to the increase in well-being or fall in poverty level (HCE) by 38.4782%. Though the relationship is negative, however it is statistically insignificant since the t–statistics (0.09124) is greater than the significant value (0.05). Hence, there is no strong evidence that changes in remittances (RemGDP), significantly led to poverty reduction. Again, the coefficient of change in per capita income (kPC) 0.009090 is negative and also very small. Regardless of the sign, its t–statistic (0.58932) is greater than the 5% significant level. Therefore, the indication is that there is no strong evidence that changes in per capita income (kPC), significantly led to poverty reduction. In the same vein, life expectancy (LIFEX) has a coefficient of 0.005828, indicating a positive relationship with poverty reduction (HCE), however there is insufficient evidence to conclude that LIFEX significantly influence poverty reduction since its t-statistic (0.87968) is more than 0.05 level of significance. In addition, the exchange rate (EXRATE), with a statistically insignificant t-statistic (0.57858) has a negative coefficient of 0.195723 which implies that a rise in exchange rate will worsen the poverty level.

Finally, the ECM-1 coefficient is -0.001481, with a t-statistic of -0.51561. The negative sign is theoretically consistent with the expected error-correction mechanism. It suggests that approximately, any deviation from the long-run equilibrium would be corrected in the subsequent period. In other words, it implies that the model has 0.481% possibility of adjustment from short-run to long-run equilibrium. However, the t-statistic of -0.57858 is statistically insignificant.

4.4 Post estimation diagnostic for the remittances model

4.4.1 Serial correlation LM test

The null hypothesis of this test was that there is no serial correlation in the residual of the model and the decision rule is to reject the null if the probability value of the observed Chi-squared is less than 5%.

Table 6: Result of serial correlation LM test

VEC residual serial correlation LM tests		
Null hypothesis: No serial correlation at lag order h		
Date: 02/05/24 Time: 17:41		
Sample: 1986 2020		
Included observations: 33		
Lags	**LM-Stat**	**Prob.**
1	15.06126	0.9399

Probs from chi-square with 36 df.

Source: E-views 9.0

Since the prob. value (0.9399) is greater than 0.05, we do not reject the null hypothesis. Therefore, there is no serial correlation among the residuals, meaning there is no presence of serial correlation.

4.4.2 Normality test

Normality test was essential to ascertain the distribution of the data set in the model. The null hypothesis for this test was that the variables were normally distributed. This is to be rejected if the probability of Jarque-Bera is less than 0.05.

Table 7: Result of normality test

Null Hypothesis: residuals are multivariate normal			
Date: 02/05/24 Time: 17:43			
Sample: 1986 2020			
Included observations: 33			
Component	**Jarque-Bera**	**Df**	**Prob.**
1	37.71033	2	0.0000
2	356.6409	2	0.0000
3	280.8919	2	0.0000
4	2.700452	2	0.2592
5	321.5341	2	0.0000
Joint	959.5231	10	0.0000

Source: E-views 9.0

The null hypothesis can be rejected since the joint probability value of Jarque-Bera, (*P-value = 0.0000*) is less than 0.05. Therefore, the model is not normally distributed.

4.4.3 Heteroscedasticity test

This test was conducted using VEC Residual Heteroskedasticity test. Heteroscedasticity test follows the F-distribution with degree of freedom given. The null hypothesis is that the error term is homoscedastic and we are to reject the null hypothesis if the probability of the joint Chi-sq is less than 0.05. Otherwise, we accept the null hypothesis.

Table 8: Result of heteroscedasticity test

VEC Residual Heteroskedasticity Tests: No Cross Terms (only levels and squares)		
Date: 02/05/24 Time: 17:45		
Sample: 1986 2020		
Included observations: 33		
Joint test		
Chi-sq	**Df**	**Prob.**
207.6912	180	0.0770

Source: Eviews 9.0

Since the p-value of the Chi-Square (0.0770) is greater than 0.05, the null hypothesis is not rejected. Therefore, the error term is heteroscedastic. Meaning that there is no homoscedastic problem in the model.

4.4.4 Granger causality

The essence of causality analysis using the Granger causality test is to ascertain whether a causal relationship exists between the variables of interest.

Table 9: Result of causality test

Pairwise Granger Causality Tests			
Date: 02/05/24 Time: 17:55			
Sample: 1986 2020			
Lags: 1			
Null Hypothesis	**Obs**	**F-Statistic**	**Prob.**
RemGDP does not Granger Cause HCE	34	5.67798	0.0235
HCE does not Granger Cause REMGDP	-	0.78289	0.3831
LIFEX does not Granger Cause REMGDP	34	0.00014	0.9908
RemGDP does not Granger Cause LIFEX	-	6.29230	0.0176

Source: E-views 9.0

Table 9 shows pairs of null hypotheses based on Granger causality with a combination of different uni-directional causality relationships. Since the p-value is less than 0.005, the Pairwise Granger at F-statistics indicates the presence of a causal association between the variables under investigation. For example, there is a causal association in the first row between the ratio of remittances to GDP (REMGDP) and household consumption expenditure (HCE). This implies that remittance granger cause poverty reduction in Nigeria within the period of study. Similarly, there is a causality relationship between the ratio of remittances to GDP (REMGDP) and Life expectancy (LIFEX) in the fourth row. This implies that remittances (REMGDP) granger cause life expectancy (Lifex).

4.5 Evaluation of research hypotheses

The results for the various hypotheses testing are presented in the section.

4.5.1 Test for working hypothesis one

H_{o1}: Remittances have no impact on poverty reduction in Nigeria.

Decision

The VECM estimation presented in Table 5 revealed some interesting findings relating to the impact of remittance on poverty reduction in Nigeria. In the short run, the t-value for RemGDP in absolute terms, which was a proxy for remittance, is statistically insignificant based on the 2-t rule-of-thumb threshold. Since the t-value of remittance did not meet up with the '2-t rule of thumb' criterion, then the null hypothesis that remittances have no impact on poverty reduction in Nigeria is not rejected. This implies that in the short run, remittances has no impact on poverty reduction in Nigeria, other things being equal.

4.5.2 Test for working hypothesis two

H_{o2}: There is no causality relationship between remittances and poverty reduction in Nigeria.

The p-values of the F-statistic being less than 0.05 for each of the pairs in the Granger Causality table 9 above, suggest that the variables that made up the pairings have a unidirectional causal relationship. Therefore, unidirectional causation relationships between RemGDP and HCE; and between REMGDP and LIFEX, respectively, indicate that causality relationship exist between remittances and poverty reduction in Nigeria.

4.6 Summary of findings

The following are the major findings of the study**:**

- In absolute terms, remittances have statistically insignificant impact on poverty reduction in Nigeria since the t–statistic (0.09124) is > (0.05) significant level. However, an increase in remittance led to 38.4782% reduction in poverty level in Nigeria.
- Since the *p*-values of the causality between the ratio of remittances to the GDP (RemGDP) and household consumption expenditure (HCE) for each of the pairs of unidirectional causality respectively, is less than the 0.05 significance thresholds. It therefore implies that there is causality relationship between remittances and poverty reduction in Nigeria.

5. Conclusion

This study concludes that remittances have insignificant impact on poverty reduction in Nigeria. This is in line with the Neo-maxist theorists view on migration and international remittances. According to Azam, Haseeb, and Samsudin, (2016) [8] migration and international remittance inflows reproduced and reinforced the capitalist system by encouraging inequality between developed and least developed countries. In comparing the costs and benefits driven form migration and remittances, they argue that the loss of enormous human resources from the developing countries due to migration cannot be compensated with the trickling amount of benefits that remittances yield to the origin countries.

The study has noted the insignificant impact of remittances given its impact on poverty reduction in Nigeria. It nonetheless, takes into consideration the fact that poor utilization of remittances inflows into Nigeria, due to structural deficiencies, poor infrastructure, poor policy implementation, corruption and misappropriation, etc. have serious implication on poverty reduction in the country.

6. Recommendations

Based on the findings of the study, the following recommendations are made:

- The government should introduce a special bond to incentivize the diaspora population to remit more of their incomes homeward towards contributing to the improvement on local infrastructure as well as enhance the exchange rate position of the Nigeria economy which will encourage productivity and reduce poverty level in the country.
- Also based on the study, remittance has the potentials to reduce poverty in the long run. Therefore, government should place a higher premium on diaspora investments in the form of technical assistance, over and above other investment facilities such as national and state bonds, treasury bills, etc to attract real development in human capital and infrastructure which can accelerate economic growth, job creation and poverty reduction in Nigeria faster.

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