

## LABOUR EMIGRATION, REMITTANCES, AND ECONOMIC DEVELOPMENT: AN EMPIRICAL ANALYSIS

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### ***Abstract***

*There has been a lot of controversy on the effects of labour emigration and remittances on economic growth and development in the sending countries. Some concluded a significant positive impact, while others failed to identify a direct link between labour and remittance inflow, and economic development. This study therefore empirically estimates the effects of international labour emigration and remittances on economic development in Nigeria, using annual time series data for the period 1977-2021. The Ordinary Least Square (OLS) is employed to analyse the model. Findings suggest a significant positive effect on economic development in Nigeria. Therefore, we recommend that the government should be more involved in labour emigration by establishing policies that protect migrants in their host countries thereby ensuring their stability for effective productivity.*

***Keywords:*** *Labour Emigration, Remittances, Economic Development, OLS.*

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### **1. Introduction**

According to the United Nations, Emigration is the movement of people from one region to another for temporary or permanent residency. It involves moving from one's usual place, country, or region of residence to another (UN IOM, 2021). There has been a form of exchange

of labour between the rich countries and the less developed countries. Whereby, certain factors such as wage and income differentials, political, geographical, and other factors tend to push people away from their countries of origin or residence to other countries. The perceived better socioeconomic structure in the destination countries can also attract labour to emigrate for an improved standard of living (World Bank, 2006). Additionally, the labour force in most rich countries is likely to experience shortage because of their ageing population, therefore, international labour migration becomes a relevant topic for all stakeholders both locally and globally.

Is labour emigration beneficial to both parties (the sending country, the host country, and the emigrant)? In answering this question, economic theories of international labour migration argue that the benefit from migration is quite bulky and diverse. First, the sending countries enjoy the benefits of income transfer from abroad, in the form of personal remittances. At the micro-level, remittances are an alternative useful source of income for partaking households in less developed countries (Lewis, 1954; Adepoju, 2008; WickramasingHe & Wijitapure, 2016). The economy at large benefits from remittances through savings and investments in human capital development, and other forms of investments. Micro-enterprises can raise capital for their business through remittance inflow thereby strengthening the country's informal sector. However, the benefits for emigrants are mixed, on the one hand, they gain international work experience, take care of their remaining family back home, and earn more degrees which positions them for better opportunities. On the other hand, they mostly pick up jobs that are rejected by the native workforce, and that require less skills (Tarasyev & Jabbar, 2018; Tipayalai, 2020). Therefore, their qualifications and skills from their home countries may not count, they tend to study more to be highly competitive.

The host countries benefit from the cultural diversity, skills, and productivity of migrants who contribute significantly to the total productivity of the countries (Alberto, et al, 2015). Labour emigration also enhances the flow of foreign earnings into the country of origin through the household of the emigrants. This has become a centre of attraction to potential migrants because remittance tends to increase the socioeconomic status of the receiving families (Lewis, 1954; Adepoju, 2008; WickramasingHe & Wijitapure, 2016). As the flow of remittances increases over time, it eliminates the income gap between the rich and the poor in society. One argument about international migrant remittance is the significant effect on the aggregate

development of the country. How big is the flow of income transfer from emigrants to effect overall positive change in the economy as proposed by both theoretical and empirical evidence?

Some studies suggest that economic development is not enhanced by remittance flow because most of the income transfer is spent on consumption goods, especially food and clothing, while only a little part is expended on traditional investments like businesses, real estate, and education. However, as a counterargument, it is gathered that, although there might not be a direct causal effect between economic development in general and income transfer from overseas, remittance is very effective for the socio-economic development of households at the micro level (Roman & Voicu, 2010; Pozniak, 2012; Walmsley, et al, 2015; Pholphirul, 2012; Brunow, et al, 2015). For instance, it helps in reducing income equality and poverty, facilitates the accessibility to basic education, and health facilities, and is useful for small-scale businesses, not ignoring the strengthening of the local currency in the foreign exchange market (Lopez-Cordova & Olmedo, 2006). The direction of causality between these two variables is unidirectional (Adesina-Uthman, 2017). Overall, for remittance to be beneficial to the household and the country at large, it must be sustainable. Sustainability is what guarantees the human development factor of remittance flow to the home country (Massey, et al, 1994).

The final beneficiaries of remittances are not the immediate household of the emigrants, especially if the business owners of the consumables bought by the recipient's families expand the business or invest more, thus, increasing the informal sector. Lastly, income transfer from abroad is usually done through the banks in most cases, if the receiving family decides to deposit the money, the bank has more funds in return to lend to potential investors, who increase the turnover from such funds, hence higher expected returns is possible (Asch, 1994; Prakash, 2009; Wickramasinghe & Wijitapure, 2016; Adedokun & Karzanova, 2019; Adeseye, 2021). This further emphasizes the role of remittance as an economic and financial return of international labour migration.

Africans have been perceived as the “continent on the move” due to the poor economic performances of most countries within the continent. The global perspective also indicates that sending countries stand to benefit greatly from labour emigration. It has also been observed that the focus of most studies is economic growth, whereas the overall performance of remittances and economic development is crucial. Bearing in mind that there are lots of consequences that affect the sending countries, such as brain-drain, income inequality, low returns on human capital accumulation and development due to inflation, poor labour

productivity and so on. As of when this work was conceptualised, no research work has comprehensively captured the source of remittance – international labour migration, and its corresponding impact on economic development in Nigeria. This study, therefore, examines the impact of labour emigration and remittance inflow on economic development in Nigeria, using a macro-level approach. The objective of this study is to establish and analyse the empirical relationship between labour emigration and remittances, and overall economic development in Nigeria. The study will cover the span of 44 years, (1977-2021). The rest of the article is structured; thus, section II will focus on a literature review on labour emigration, remittance inflow and economic development. Section III discusses the sources of data, methodology and analytical framework of the model. Section IV presents and discusses the regression results. Section V focuses on the conclusions and recommendations.

## **2. Literature Review**

This section is divided into 3 sub-sections: (a) conceptual review (b) theoretical review, and (c) and empirical review.

### ***Labour Emigration and Remittance inflow in Nigeria: A Conceptual Review***

According to the World Bank, remittances are described as:

*“payments and receipts of income by migrants who are employed or expected to be employed for more than a year in their new economy, where they are considered residents”* (World Bank, 2006)

Remittances are part of the inflow of foreign earnings into the countries of origin of emigrants. It is the monetary flow of funds from abroad to family members of emigrants. Evidence revealed that the size of the flow is large and quite sizable. This is because most emigrants usually have strong ties with their source country (Harris & Todaro, 1970; Gugler, 1968). Remittances have become a sustainable external source of finance to the sending country (Adepoju, 2008; Adedokun & Karzanova, 2019; Asch, 1994; Dharmadasa, *et al*, 2018; IMF, 2020).

The United Nations in its 2020 International Migration Highlights emphasised the impact of remittances on the households of emigrants. Money flow and transfer from emigrants improve the immediate household of emigrants, and the country at large through investments in health,

education, sanitation, housing, and other essentials (United Nations, 2020). Globally, Sub-Saharan Africa has the highest cost of remittance. There is a very high cost of sending money across international borders as far as SSA is concerned. On average, in the 2021 first quarter, the cost of money transfer from abroad was around 6.4 per cent, specifically, transfer to SSA is around 8 per cent. Nigeria is a major recipient of remittance inflow in SSA countries. In the pre-pandemic period, the total African receipts stood at \$48bn out of which Nigeria's share was \$23bn (Okeowo, 2021).

In 2017, the total migrant remittance for Nigeria was \$22.00bn and US\$24.31 in 2018, which represented 6.1% of the GDP, and a 14% increase from the previous year. The remittance inflow translates to about 83 per cent of the Federal government of Nigeria's annual budget for 2018 (Nevin & Omosomi, 2019). Empirical analyses on the effects of remittance on economic growth are divided, some studies show that remittances have a positive significant effect on economic growth, while others suggest a negative relationship between the variables, implying that the flow of income transfer from abroad has a positive outcome on the economy. Remittances are affected by the dollar depreciation that raises the value of remittances relative to the local currencies. There has been a doubling of value in the actual remittances as against the expected US\$167 billion in 2005, since then it has continued to increase globally (Adepoju, 2008).

It is imperative to note that the full scale of remittances is not documented because of the channels through which they come, a common example of unrecorded remittance is through the informal sector. Remittances are likely going to increase by 50 per cent or more conservatively if the flow through the informal sector is documented (World Bank, 2006; Prakash, 2009). The highest proportion of remittances is accrued to the emigrants and their families. Economic gains from emigration serve as an incentive or motivation for emigration. The gains depend on the economic situation of the source country, for instance, in high-income countries, wage levels are five times higher when adjusted for purchasing power parity, than in low-income levels. Remittances from emigrants are sources of economic life to the poor households in most low/middle income countries.

There is a link between remittance flow, poverty, and household access to health care facilities. Remittance affects savings and investment at the macro level because of its impact on aggregate demand and consumption. At the micro level, remittances directly increase the disposable income of individuals and households, thereby increasing their level of

consumption, and consequently reducing poverty (Roman & Voicu, 2010). Therefore, a reduction in remittance inflow could result in higher poverty rates (World Bank, 2020)

### **Theoretical Review**

The most famous theory of international migration is the neoclassical theory. This theory argues that labour emigration results from labour market imbalances and differences between labour supply and demand (Lewis, 1954; Todaro, 1976). The theory stresses that people migrate from low-wage regions to other regions with higher income, better infrastructure and other socioeconomic benefits. People migrate for incentives which are mainly in form of remittances and other income from abroad. This is a motivation for labour, especially in those in developing countries with zero marginal product of labour and excess population. These remittances are useful alternative sources of income for participating households, the inflow fosters productivity in the emigrants' country of origin. The immediate household of the emigrants is the direct beneficiary of remittance at the micro-level and the economy at large also stands to benefit from investments made by the remittance-receiving households (Wickramasinghe & Wijitapure, 2016; Flahaux & De Haas, 2016; Prakash, 2009). The neoclassical theory was criticised for being based mainly on economic incentives (Prakash, 2009) and unrealistic, portraying developed countries as willing recipients of migrants (Kurekova, 2011).

### **Empirical Review**

A study by Didia & Tahir (2021) concludes that despite being a large source of foreign exchange in the country, remittance inflow has no long-run impact on total output in Nigeria. The study examines the impact of remittance inflow on economic growth in Nigeria both in the short-run and the long-run, using a set of annual time series data covering the period 1990-2018. The Vector Error Correction Model (VECM) was employed to analyse the model. Findings reveal that remittance reduces economic growth by 0.9% in the short run, and in the long run, no significant impact is established.

According to Adeseye (2021), remittances are an increasing constant source of growth over decades in Nigeria. The author investigates the relationship between emigrants' remittances and economic growth using time series data for the period 1990-2018. The model was estimated by multiple linear regressions – ANOVA, Correlation and Coefficient. The results

show a positive significant relationship between remittance inflow and economic growth in Nigeria.

In West Africa, there is a positive effect of remittance on economic growth. Adjei, *et al*, (2020) analysed the significant impact of remittance on economic growth, using a dynamic panel data model of seven Western African countries, for the period, 2003-2018. The study specifically uses the cointegration test and the Vector Error Correction Model (VECM) to estimate the panel data series. The countries under observation are; Nigeria, Togo, Ghana, Guinea-Bissau, Burkina-Faso, Guinea, and Mali. The result shows that remittances exert a significant positive impact on the growth of the economies of these countries.

Igbinedion (2020) argues that in Nigeria, remittance-oriented growth is not inclusive, which in turn has a negative effect on economic development. The study assessed the effect of remittance fluctuations on inclusive growth in Nigeria using the Fully Modified Ordinary Least Squares method (FMOLS) on a set of secondary time series data for the period 2000-2018. The result shows that fluctuations and economic shocks in migrants' remittances in the host countries affect economic growth negatively in the sending country.

Likewise, the asymmetric testing and nonlinear impact of remittance inflow on economic growth in Nigeria indicate a 'puncture' in the growth prospect of the country, both in the short run and in the long run (Olayungbo, *et al*, 2020). In their study, the authors decomposed remittance inflow into two basic components: the positive and the negative components. The positive components represent the 'brain gains', while the negative components represent the 'brain drain'. The study used time series data covering the period 1981-2018, the model was analysed using the Nonlinear Autoregressive Distributed Lag (NARDL). The result shows that remittance inflow does not enhance growth in Nigeria, implying that it creates a disincentive for labour productivity. Also, the result reveals that a decrease in the flow of remittance into the country stimulates economic growth significantly.

John, *et al*, (2020) studied the effect of diaspora remittances on economic growth in Nigeria using a set of primary data, analysed using the Ordinary Least Square (OLS) method. The result established a significant positive relationship between the variables; however, the effect is insignificant.

According to Adesina-Uthman, (2017), there is a unidirectional causality relationship between remittance and economic growth in Nigeria. The study re-examined the relationship between

financial development and economic growth in Nigeria with a focus on remittance inflow into the country. The author used annual time series data for the period 1977-2016 and the ARDL model and Granger Causality test to estimate the model. The result shows the GDP granger-cause remittance, suggesting a unidirectional causality between the variables. The ARDL long-run result shows a negative impact of remittance on economic growth in Nigeria, though not statistically significant. While in the short run, remittance inflow impacts the economy positively with a 10.1 percent speed of adjustment.

A dynamic analysis of the effect of remittance on economic growth in Nigeria shows a positive relationship. This is according to the findings of Ajayi, *et al*, (2017) who examined the dynamic impact of remittance inflow on economic growth in Nigeria for the period 1970-2013 using a Generalised Method of Moments (GMM) to estimate the model. The results show that remittance inflow has positive effects on economic growth in Nigeria for the period under review.

The impact of remittance inflow on economic growth in Nigeria is positive and statistically significant. This is according to Oshota & Badejo (2015), who studied the relationship between remittances inflow and the RGDP for the period 1981-2011, using annual time series data on RGDP, REM, FA, and the FDI. The model was analysed using the Error Correction Modelling approach. Results show that a unit increase in remittances increases economic growth by 0.19 per cent in the long run. In the short run, however, the relationship is inverse. The study also found a significant positive impact of foreign aid on economic growth both in the short run and the long run in Nigeria, while FDI shows an inverse relationship in the long run.

Remittance inflow is a crucial source of sustainable foreign exchange that contributes to economic growth and development in Nigeria. The empirical analysis of Iheke (2012) shows a positive relationship between total output and remittance inflow in Nigeria. The study estimated the effect of remittance inflow on economic growth in Nigeria using a trend analysis on time series data that covers the period 1980-2008. The result further strengthens the development economics' view that remittances are significant factors that enhance long-run economic growth in less developed countries. Volatilities in remittance inflow result in a negative impact on the economy in Nigeria.

In Niger, Oumarou, (2021) assessed the link between remittance inflow and economic growth using annual secondary data for the period 1980-2019, and Engle-Granger causality test and



the Error Correction Model (ECM). The empirical findings suggest the variables have a long-run relationship, and in the short run, a significant positive effect is enhanced.

In selected emerging countries in South Asia, Sri Lanka, Bangladesh and Pakistan have not benefited positively from remittance inflow, except for India (Sutradhar, 2020). This study analysed the effects of remittance on economic growth in these countries using panel data for the period 1977-2018. The model is estimated using Pooled Ordinary Least Square (OLS). The joint comparison of these four countries indicates that a significant negative relationship exists between remittance inflow and economic growth.

The impact of remittance inflow on investment is insignificant, thereby implying that remittance has little or no significant effect on economic growth in Pakistan. The direct effect is more on consumption rather than investment. Asad, *et al*, (2016) evaluate the relationship between remittance inflow, labour migration and economic growth in Pakistan. The study used the recursive OLS method to analyse a model using annual time series data that spans from 1975 to 2010. The study also tests the causality and cointegration of the variables in the model. The result shows that labour migration, remittance and economic growth have a long-run relationship. The causality test results indicate a unidirectional causality between remittance inflow and economic growth.

Hussaini & Kabuga (2018) found a positive impact of remittance on economic growth in the short run, while its effect is statistically insignificant in the long run in Nigeria. Ceesay, (2020) ascertain a 0.14% increase in economic growth resulting from a 10% increase in remittance inflow in the Gambia using the linear regression models on a set of time series data covering the period 1960-2017.

Workers' remittances contribute to economic growth, but not overall welfare in Nigeria. Olubiyi & Olarinde (2015) analysed the developmental effects of remittance inflow on poverty, per capita income, and general economic development in Nigeria. The study used a set of annual time series data covering the period, 1980-2013. The GMM was deployed to estimate the model, together with the OLS. The regression results indicate that remittances do not facilitate overall economic development in Nigeria, but rather, economic growth, which does not 'trickle down' to enhance citizens' welfare. The study concluded that the beneficiaries of remittances are mostly the middle-income class whose propensity to consume is higher than investment, which results in poor purchasing power due to an increase in prices.

Most remittance-receiving households spend more of their income on basic consumption and rarely on investment, which explains why the impact on economic growth is insignificant (). One major disadvantage of remittance inflow in developing countries is the fact that labour productivity tends to reduce due to over-dependence on stable income transfer (Koyame-Marsh, 2012).

Having reviewed some of the existing literature, clearly, the impact of remittance on economic development has not been fully understood, given the dearth of literature on this aspect. It can also be concluded that most existing literature focused more on remittance-led growth and not overall development at the macro level. This study, therefore, fills this gap by assessing the impact of labour emigration and remittance inflow on economic development in Nigeria. The neoclassical theory of migration is the preferred theoretical framework for this study, because it is more suitable for empirical analysis at the macroeconomic level.

### **3. Data Analysis and Methodology**

The objective of the study is to analyse the impact of labour emigration and remittances on economic development in Nigeria. Secondary time-series data on HDI, Remittance inflow, Net Migration Rate, and Exchange rate for Nigeria, covering the period 1977-2021. The ARDL method of analysis is used to test the overall long-run effect of remittances on economic growth in Nigeria, after which conclusions will be made. The dependent variable is Human Development Index (HDI), which represents the multi-dimensional economic development indicator. The independent variables are Remittance inflow (REM), which is the total amount of personal income remittances from abroad (measured in US\$), and Net Migration Rate (NMR), which represents the difference between the total number of immigrants less emigrants.

Following the model specification of Prakash, (2009), and the analysis of (Asch, 1994; Boubtane, *et al*, (2014), the model in a linear form is specified as follows:

$$\text{HDI} = \alpha_0 + \alpha_1 \text{REM} + \alpha_2 \text{NM} + \mu \quad (1)$$

Where: = Economic Development (Proxy by Human Development Index (HDI)

REM = Remittance inflow

NM = Net Migration Rate

$\mu$  = the error term

$\alpha_0$  = the intercept

$\alpha_1$  and  $\alpha_2$ , are all parameters to be estimated.

The preferred choice of method of estimation is the Ordinary Least Square (OLS). The traditional OLS has basic properties which have made it the best among the class of estimators. The OLS has a pure linear property which implies that there is a linear relationship between the dependent variable, Y, and the estimators. The OLS is also unbiased, depicting the inclusion of the error term allowing randomness of the estimators, especially the dependent variable. What makes OLS most desirable and strongest is the unbiasedness property which makes an estimator and unbiased estimator of the true population. The OLS estimators have minimum variance which makes the method efficient, thereby giving more accurate results among all unbiased estimators. In terms of an asymptotic distribution, the OLS allows any form of biasedness of estimators to disappear with an increase in the sample size. It also gives a consistent result even if the sample size increases. Therefore, the OLS estimators are the Best Linear Unbiased Estimators, this is based on the Gauss – Markov Theorem (Theil, 1971).

Traditional economics theories postulate that international labour migration is an avenue for growth and development, especially in developing economies characterised by a high population growth rate, and poor economic performance. However, the magnitude of the effects of international labour emigration on overall economic growth and development in the sending country depends on a lot of factors. The composition and nature of labour migration, the prevailing economic environment, emigrants' experiences, and financial stability, as well as households' consumption and investment pattern, are all factors that can either promote growth or slow down the process (Lucas, 2005). Nevertheless, it is expected that labour emigration improves the financial independence of the remaining citizens in the country. Remittance inflow is expected to have a positive impact on income inequality and economic development.

#### **4. Presentation of Regression Results**

This analysis is estimated using the traditional ordinary least square method (OLS). The OLS gives the best linear unbiased estimation of the model. Among the class of estimators, OLS gives the least minimum variance, making it the most widely acceptable estimator and the

strongest for estimating unknown parameters. The analysis kicked off with a pretest of all variables, which is very important in checking for stationarity and cointegration of all the variables in the model. It is imperative that all variables are stationary and have a long-run cointegration to avoid spurious results. The ADF unit root test results are presented in Table 1.

**Table 1 Augmented Dickey-Fuller Unit Root Test**

Variable	Stationary	ADF t-stat (Prob)	Order of Stationarity
Human Development Index D(HDI)	Yes	-4.415675 (0.0048)	I(1)
Remittance inflow D(REM)	Yes	-7.668905 (0.0000)	I(1)
Labour Emigration D(NMS)	Yes	-4.536652 (0.0007)	I(1)

**Source: Authors' computation using Eviews 12SV**

From the unit root test results, we can see that all variables are stationary at a 1% level of significance except for HDI which is at 5%. The next is to check for a level relationship among the variables, to determine if they can co-move in the future. This is achieved using the Johansenn Cointegration. This method allows for more than one cointegrating equation of the model. It uses both the trace value and the maximum-Eigenvalue to accept the null hypothesis of no cointegration or reject it. The result is presented in table 2.

**Table 2 Johansen Cointegration Test Results**

Sample (Adjusted): 2005 2021,  
 Included Observations: 17 after adjustments  
 Trend assumption: Linear deterministic trend  
 Series: HDI LN\_REM NMR  
 Unrestricted Cointegration Rank Test(Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical value	Prob**
None*	0.980237	77.17626	29.79707	0.0000
At most 1	0.392513	10.46932	15.49471	0.2464
At most 2	0.110786	1.996098	3.841465	0.1577

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical value	Prob**
None*	0.980237	66.70694	21.13162	0.0000
At most 1	0.392513	8.473221	14.26460	0.3326
At most 2	0.110786	1.996098	3.841465	0.1577

Trace test indicates 1 cointegrating eqn(s) at 0.05

\*Denotes rejection of the hypothesis at the 0.05 level

\*\*Mackinnon-Haug-Michelis (1999) p-values

**Source:** Authors' computations using data from the World Development Indicators and the CBN

The trace test and Maximum-Eigen value both show that there is one cointegrating equation in the model at 0.05% level of significance. Therefore, we conclude that there is a long-run relationship among the variables in the model. Hence, we reject the null hypothesis of no cointegration in the model. Having established co-movement of all the variables, in the long run, we then proceed to run the OLS regression using the E-views (12SV). See table 3 for the details of the result.

### Table 3 OLS Regression Results

Dependent Variable: HDI

Method: Least Squares

Sample (adjusted): 2003 2021

Included observations: 19 after adjustments

### OLS Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.083004	0.151330	0.548502	0.5909
LN_REM	0.018351	0.006425	2.856142	0.0114
NMR	0.056218	0.021078	2.667119	0.0169

R-Squared	0.524723	Mean dependent var	0.499158
Adjusted R-Squared	0.465313	S.D. dependent var	0.030161
F-statistic	8.832279	Durbin-Watson stat.	1.078241
Prob(F-statistic)	0.002604		

**Source: Author’s computations using Eviews 12SV**

The OLS regression result reveals that all the independent variables have positive effects on the dependent variable. In other words, both remittance inflow and labour emigration contribute positively to the economic development of people in the sending countries. Remittance inflow has a coefficient of 0.018 and a p-value of 0.011, suggesting that it is significant at 1 per cent level. Labour emigration also has a positive coefficient of 0.056 and a probability value of 0.016, suggesting that it is significant at the 10 percent level.

One interesting part of the result is the intercept (C) which is positive but not significant. This happens when there are not enough observations but doesn't pose any problem if the object is to test the relationship between the predictor and the response (Grace-Martin, 2013). The R-squared is 0.52, while the adjusted r-squared is 0.46. This means that 52 per cent of the variations in the dependent variable are caused or explained by the independent variables. The R-squared is greater than 0, but less than 1 ( $R^2 > 0 < 1$ ), this means that it lies between 0 and 1; hence, we can conclude that the model is in good fit. The Durbin-Watson statistic is 1.07, which is lower than 2, bearing in mind that an acceptable range is between 1.5 and 2. Therefore, as a way of ensuring that the estimation is free from errors, the post-diagnostic test of the model was conducted, and the results are satisfactory.

The serial correlation LM test is useful for checking if there is any form of autocorrelation in the model. The result is presented in table 4:

**Table 4 Serial Correlation LM Test**

**Breusch-Godfrey Serial Correlation LM Test**

Null hypothesis: No serial correlation at up to 2 lags

F-statistic	1.716997	Prob. F(2,14)	0.2153
Obs*R-squared	3.742453	Prob. Chi-Square (2)	0.1539

**Source: Author’s computation using Eviews 12SV**

The Serial Correlation LM Test shows that this model is free from serial correlation. The F-statistic is 1.71 and the probability value is 0.21, which is clearly higher than 0.05%, therefore, rejecting the null hypothesis of serial correlation is in order. See table 4 for the results.

We also check the model for homoscedasticity, that is if the variance of the error terms is equal and constant across the independent variables. The heteroskedasticity test of Breusch-Pagan Godfrey is commonly used and that is the choice for the model.

**Table 5 Heteroskedasticity test**

Heteroskedasticity Test: Breusch-Pagan-Godfrey

Null hypothesis: Homoskedasticity

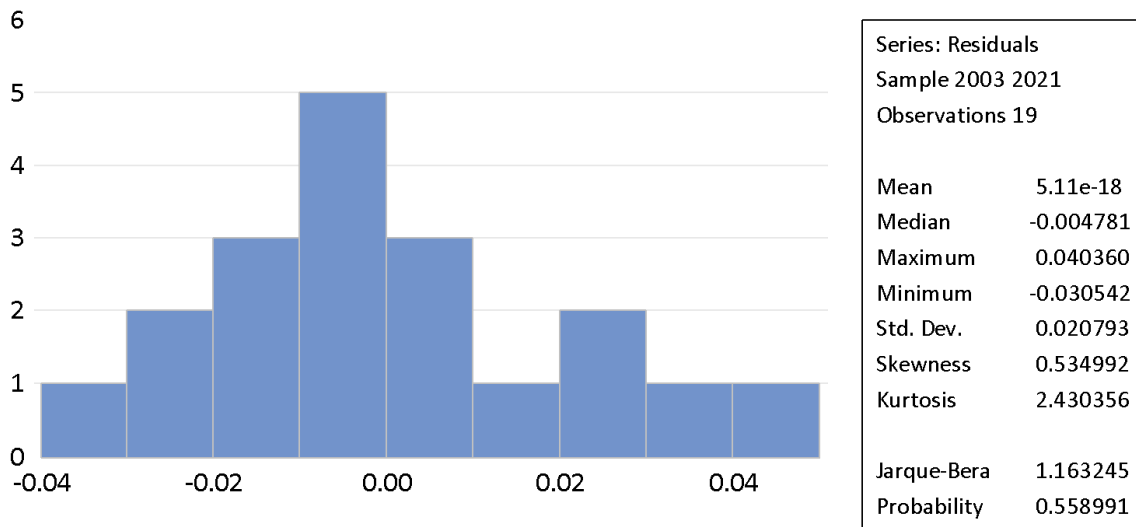
<i>F-statistic</i>	1.131715	Prob. F(2,16)	0.3470
<i>Obs*R-squared</i>	2.354715	Prob. Chi-Square (2)	0.3081
<i>Scaled explained SS</i>	1.194223	Prob. Chi-Square (2)	0.5504

**Source: Authors’ computations using Eviews 12SV**

The p-values of the f-statistics observed r-squared and scaled explained SS are 0.3470, 0.3081, and 0.5504 respectively. This shows that the p-values are higher than 0.05, hence the null hypothesis of homoscedasticity is accepted.

The normality test of Jarque-Bera test and histogram normality test were employed. The histogram normality test shows that The histogram has a bell-shaped curve, showing that the model has a normal distribution. The Jarque-Bera value is 1.16 and the p-value is 0.55 which is higher than 0.005, hence, we accept that this model has a normal distribution. The result is presented in *figure 1*:

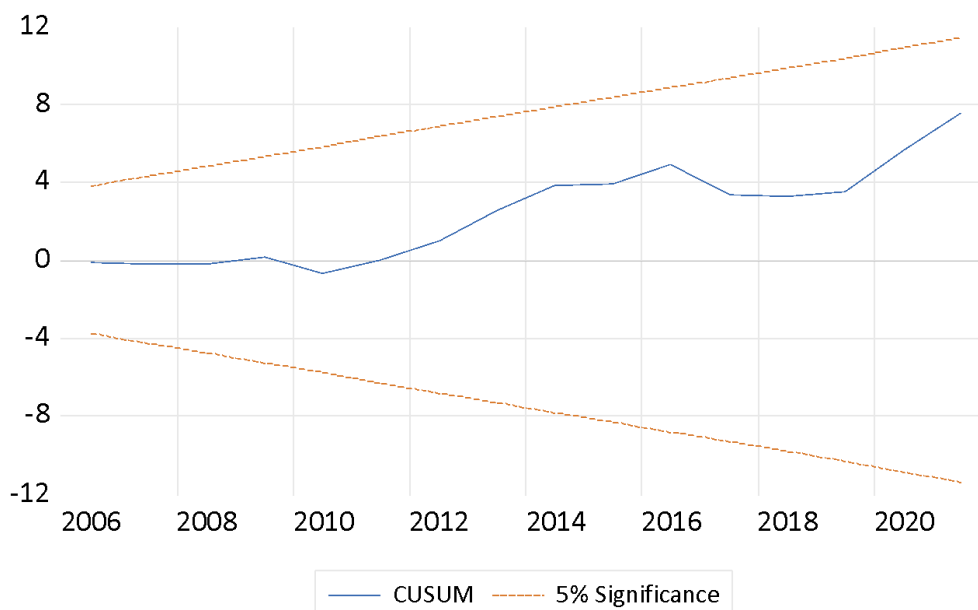
**Figure 1 Histogram - Normality Test**



**Source: Authors' computations using Eviews 12SV**

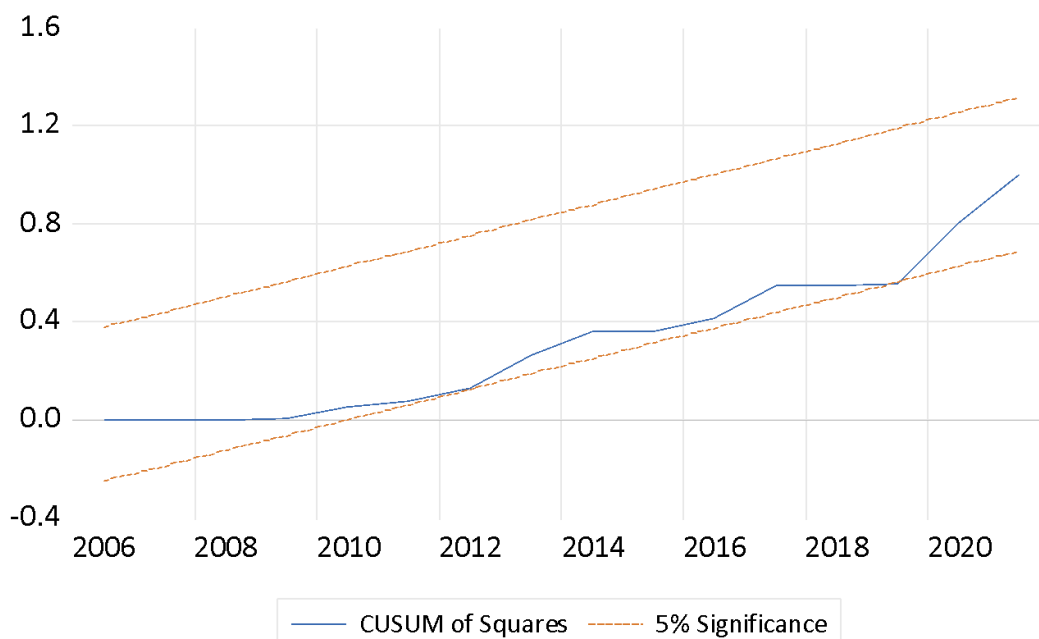
The recursive estimates help check if the model is fitted within the accepted level of significance (0.05%) or falls outside the range. For this model, we used both the CUSUM and CUSUM Sum of squares. See *figures 2 and 3* respectively.

**Figure 2 CUSUM Graph**



**Source: Authors' Computations using Eviews 12SV**



**Figure 3 CUSUM of Squares**

The model is well fitted within the acceptable significance level of 0.05. we can conclude that this model is stable and free from structural change. The CUSUM sum of squares shows that the model is also fitted within the 5% level of significance, however, a slight deviation or structural break can alter the stability of the model. Nonetheless, it still falls inside the range. Hence, the model is mildly stable.

## 5. Discussion of Results

The objective of this study is to examine the effects of labour emigration and remittances on economic development in Nigeria. The method of analysis is the OLS; the dependent variable is the HDI, while remittance inflow and labour emigration are the independent variables. The regression results reveal that both labour emigration and remittance inflow have positive effects on economic development in Nigeria. This implies that the benefits from international labour emigration are not only pronounced at the micro level via improved better life and standard of living but even at the macro level; there is a very strong positive impact. This finding supports that of Roman & Voicu (2010), who argue that the effects can be felt both at the micro and macro level, though might be difficult to capture at the macro level.

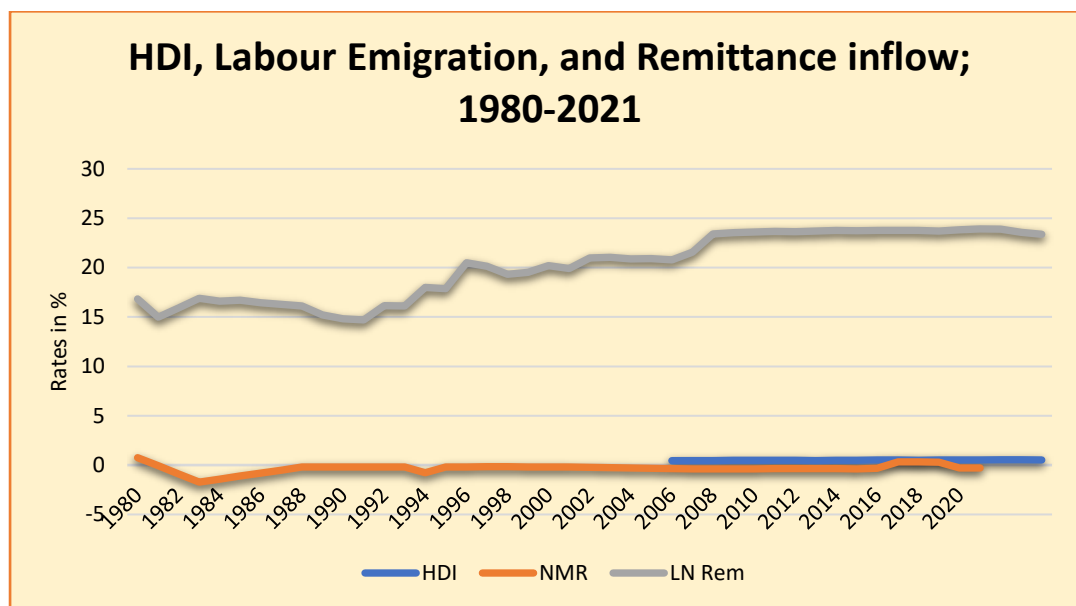
Economic development is the improvement in the socio-economic well-being of the citizens in a country. it is more concerned about how economic growth transfers to the population and improves their general welfare. The regression analysis shows that remittance has a coefficient

of 0.018 and a probability value of 0.014 indicating its statistical significance at 1% level. This means that as more labour emigrates, and remittance inflow into the country increases, the level of economic development in the country rises. A percentage increase in remittance increases economic development by 1.8% (*ceteris paribus*). This finding is in line with that of (Brunow, *et al*, 2015; Niranjana & Avijit, 2011; Roman & Voicu, 2010; Dharmadasa, *et al*, 2018; Prakash, 2009) whose studies suggest a significant positive impact of remittance on economic development. These studies also affirm that remittances benefit emigrants' households in sending countries, not just economically, but also enable them to partake in certain socio-economic activities in the country. The findings of this study disagree with that of Olubiyi & Olarinde, (2015) who argue that remittance inflow worsens the overall welfare in Nigeria.

The remittance-receiving households can afford a better life with the additional income transfer from abroad. Basic household necessities such as food, access to education, better health care, savings and investment become affordable. Remittance can also be a source of capital for investment purposes, thereby stabilizing the income level and overall general well-being. Hence, remittance is indeed a source of income for developing countries.

Lastly, labour emigration does not harm economic growth and development in Nigeria, but rather, influences overall economic development in the country. Empirical analysis of the study of international migration identifies migration as a source of income and economic growth for most households and communities who partake in it (Brunow, *et al*, 2015; Palat, 2012; Engler, *et al*, 2020). The regression results indicate that there is a significant positive effect of labour emigration on economic development in Nigeria. This inference is made based on the estimates of the coefficient of labour emigration given as, 0.056, and a probability value of 0.0169, suggesting that as labour emigration increases by 1%, the level of economic development also increases by 5.6% (other things being equal).

A graphical representation of the relationship between economic development labour emigration and remittance is presented in *figure 4*.

**Figure 4** *HDI, Labour Emigration (NMS) and Remittance; 1980-2021*

**Source:** *Authors' computations, data from World Bank.*

The graph shows almost a proportional movement of the three variables, indicating a direct positive interaction among the variables. The implication is that as one increases, the others also increase, though not for all the years under review. For instance, as the net migrant stock increased, showing that when labour emigrants were more than immigrants, there was a drop in the remittance inflow from 1998-1991. On the other hand, as the net migrant rate reduced, the total value of remittance increased, see the years 1983-1986. Likewise, between 2016-2019, there was a proportional direct relationship between net migration rates (LE) and Economic developments (HDI). As labour emigration increased, there was a considerable increase in the level of economic development and remittances in Nigeria.

## 6. Conclusion and Recommendations

Labour emigration is an alternative route to economic growth and development, especially in countries that are less developed. These countries are mostly characterized by poor economic performance, inequality in income distribution, high unemployment rate, low income per capita, low productivity, high population growth rates, and so on. Thereby giving the populace the motive to move out in pursuit of greener pastures in advanced countries. Over the decades, labour emigration has increased, and the trends, patterns, and preferences have changed tremendously, leaving countries with no choice but to redefine their migration policies. this

study examines the developmental effect of labour emigration and remittances on economic development in Nigeria, using annual time series data covering the period 1977-2021. The study concludes that both labour emigration and remittance have a significant positive impact on economic development in Nigeria.

We argue that remittance and labour emigration contribute to the overall economic development in Nigeria. Therefore, we recommend that the government should be more involved in labour emigration by establishing policies that protect migrants in their host countries thereby ensuring their stability for effective productivity. At the same time, an economically stable environment is necessary for microenterprises to flourish, which will motivate remittance receiving households to invest more. Perhaps, as a labour-exporting nation, bilateral agreements can be reached between the governments of the sending countries and host countries. This could help to put a check on illegal migration, and at the same time, protect the socio-economic benefits of emigrants in their countries of destination. The trade agreement can also protect emigrants from being taken advantage of, thereby increasing their overall productivity, which in turn increases the remittance inflow into the country.

In the future, there's the need to decompose economic development indicators, particularly, health, income inequality, poverty, and human capital development (education), to assess the impact of labour emigration individually.

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