

# An Assessment of the Determinants of *Japa* Syndrome in Nigeria

James Vaachia Ikyator, Philip Terhemem Abachi and Naomi Onyeje Doki

*Department of Economics, Benue State University, Makurdi-Nigeria*

## Abstract

*This study examined how some governance and non-governance indicators have a bearing on the *japa* syndrome in Nigeria using annual data from the World Bank, the Central Bank of Nigeria (CBN) and Nigeria Bureau of Statistics (NBS) from 1996 to 2021. Having found the variables to be free from unit root problems using the Augmented Dickey-Fuller Test and bounds test for long run relationship, both the short run and long run relationships were estimated using the Autoregressive Distributed Lag modeling approach. Variables of interest were Net Migration as a proxy for *japa* which is a dependent variable and the explanatory variables were population of Nigeria, youth unemployment rate, inflation rate, political stability and absence of violence terrorism index and government effectiveness index. The short run model revealed that the lag values of net migration have positive significant influence on the current levels of *japa*. Equally, inflation was found as a significant predictor of *japa* in the short run. In the long run, it was found that, all the explanatory variables constitute serious push factors for *japa* in Nigeria except for political stability index which has a negative and significant influence on *japa*. It recommended among other things that, the government should put necessary policies in place to control inflation, population growth and youth unemployment in Nigeria.*

**Keywords:** government effectiveness, inflation, *Japa*, political stability, unemployment

## 1. Introduction

There is a surge in the number of persons desperately leaving Nigeria to seek job opportunities abroad which is causing serious brain drain in the country. The thirst by many Nigerians to seek better conditions of working and living abroad has made popular the cliché known as '*japa*'. *Japa* is a Yoruba word and it is a slang commonly used by the Nigerian youths which means to flee or escape from the Nigerian shores. The quest to leave Nigeria by all means and anyhow, may not be unconnected with the issues of high level of unemployment, high cost of living and poor quality of governance in Nigeria. The National Bureau of Statistics (NBS) (2017) reported that the labour force in Nigeria expands beyond 2.6 million every year. Consequently, unemployment rate has remained in double digits for over a decade with an average unemployment rate of 18.15% from 2000 to 2019 (NBS, 2020). At the end of 2020, Nigeria's unemployment rate of 27.1% surpassed the global and the African rates by over 20% thereby casting some doubts on the performance of the various job creation programmes of successive Nigerian governments over the years (Asue, 2022).

The cost of living in Nigeria is also becoming prohibitively high as can be seen in the level of inflation in the country. For over two decades now, Nigeria's inflation rates have mostly remained in double digits. For instance, it was 13.72% in 2010 and did not go below 8% only to rise more than twice the value of 9.02% in 2015 to 18.55% in 2016 (NBS, 2017). In 2017, Nigeria's inflation rate slid to 16.5% and kept a downward turn in 2018 and 2019 to remain at 12.09% and 11.4% respectively. In 2020 Nigeria's inflation rate rose back to 12.88% thereby forcing the Monetary Policy Rate (MPR) to be retained at 13.5% since the single inflation targets of 6% to 9% were consistently not met (Emefiele, 2020). By August 2023, Nigeria's inflation rate stood at 25.80% based on all items year on change (CBN, 2023).

Incidentally, combined effects of high unemployment and inflation (as a proxy for cost of living) may be tamed by good public policies of the government. But good governance begets good policies and governance in Nigeria is visibly marked with very weak institutions and poor governance (Asue, Ijirshar

& Ikyaator, 2022). According to the World Bank (2021), Nigeria ranks so low on all the six good governance indicators which ranges between -2.25 (low) to 2.25 (high). These indicators include control of corruption index, government effectiveness index, political stability and absence of violence/terrorism index, regulatory quality index, rule of law index and voice and accountability index. Unfortunately, Nigeria has scored far below zero over time in all of these indicators of good governance thereby clearly depicting the country as suffering from poor governance.

The issue of human capital flight and brain drain has sparked serious research interest on the effects of the menace on the Nigerian economy. For instance, Offor, Egbulonu, Ikwuemezie, and Njoku (2022) employed autoregressive distributed lag (ARDL) model approach to study the relationship between unemployment and human capital flight in Nigeria between 1990 and 2020 with particular interest on recruitment of Nigerian medical doctors by the government of Saudi Arabia. It did not give a general view of the whole subject matter as Nigerian medical doctors hardly suffer problems of unemployment except where they are driven by high pay packages. In the same vain, Emeghara (2013) asserted that brain drain was a clog in the wheel of Nigeria's development with particular reference to the university education system. However, it is not clear, whether the spate of human capital flight and brain drain in Nigeria is reasonably determined by poor governance, high level of unemployment and/or high cost of living and hence the need for this study. Thus this study used an autoregressive distributed lag (ARDL) model approach which a dynamic model to examine the short and long run implications of poor governance, high level of unemployment and high cost of living in Nigeria on the *japa* syndrome. The rest of the paper is sectionalized into Section 2 which is review of related literature, Section 3 is the methodology, Section 4 presents the results and discussions and Section 5 draws out conclusions and recommendations for policy options.

## 2. Review of Related Literature

### 2.1 Theoretical Review

Ravenstein's Laws of Migration and Everett Lee's "Push-Pull Theory" both significantly contributed to the understanding of migration patterns and dynamics within population studies. Ravenstein's Laws, proposed in the late 19th century, provided a foundational framework for understanding migration patterns. These laws highlighted several key principles. Most migration occurs over short distances, with longer journeys typically directed toward major industrial or commercial centers. Migration primarily involves movement from agricultural to industrial areas. Cities tend to grow more due to migration rather than natural population increase. Migration increases in correlation with industrial, commercial, and transport development. Each migration stream generates a counter-flow or return migration. Females exhibit more migratory behavior over short distances, while males dominate international migration. Economic causes are fundamental drivers of migration.

Ravenstein's laws paved the way for comprehensive studies on various factors influencing migration, including industrialization, gender, race, education, labor force dynamics, and more. However, these studies often focused on migrant characteristics with less emphasis on migration volumes, reasons for migration, or the assimilation of migrants at their destination. In contrast, Everett Lee's Push-Pull Theory, introduced in the mid-20th century, sought to formalize a theoretical framework explaining the volume of migration between origin and destination based on sociological principles. In summary, Lee identified certain categories of factors influencing migration decisions. These reasons could be reasons that push individuals away from an area, factors that attract individuals to a specific area and challenges that need to be overcome

### 2.2 Empirical Review

In analyzing the *Japa* syndrome and the migration of Nigerians to the United Kingdom, Okunade and Awosusi (2023) adopted a qualitative research design utilizing a case study approach. Secondary data on migration, such as literature, reports, online commentaries, reviews, video clips, and others, were consulted, while primary data were obtained via interviews. Findings showed that, though

many Nigerians have found their way into the UK through the study channel, realistically, many used it to *japa* from Nigeria. Notably, since the process allows and accommodates immediate family members as dependents, it is a more effective pathway to be explored and utilized by many Nigerians as an escape route against poverty, under/unemployment, security threats and others.

Bashorun (2023) researched migration trajectories with a case study on high-skilled youth in Nigeria. This study aimed to understand why young Nigerian citizens are emigrating from the country. Using the qualitative approach through a structured interview method, it was revealed that education and employment are the primary reasons youths migrate. Other factors such as political freedom, adequate living and exposure are the secondary factors in emigrating. The study also showed that although these youths are aware of the expenses that come with emigration and the issue of immigration policies, they still choose to invest in emigration rather than not.

Offor *et al.* (2022) investigated the relationship between unemployment and Nigeria's brain drain using annual data from 1990 to 2020. The study revealed that Nigeria's unemployment rate significantly affects Nigeria's brain drain in an inverse relationship. Therefore, unemployment may not necessarily be a factor responsible for brain drain. For instance, in the case of Nigerian medical doctors who teamed up at Sheraton Hotel Abuja for a recruitment exercise organized by the Saudi Arabia health ministry, most of the doctors were gainfully employed in Nigeria as at the time of the recruitment exercise. This clearly indicates that other stronger variables must be responsible for Nigeria's brain drain.

Duru (2021) examined the leading causes and consequences of international migration in Nigeria. A survey research design was utilized for the study. The data was collected through a structured questionnaire. The opinions of 100 respondents selected through the purposive sampling technique was obtained on the principal causes and consequences of International migration in Nigeria. The findings revealed that the principal causes of International migration in Nigeria was job opportunities, unemployment, wealth prospects, safety and security, better conditions of service, low salaries and higher standards of living. These foremost causes of International migration in Nigeria was primarily due to economic factors. Furthermore, the findings showed that the foremost positive and negative effects of international migration in Nigeria had integrated development, increase in remittances, cheap and surplus labour, urban services and social infrastructure under stress, stricter immigration norms, multi-ethnic society and increased tolerance, Xenophobia, closing gaps in skills and cultural dilution. These effects were economic, social and political.

Equally, Popogbe and Adeosun (2020) carried out an empirical analysis of the push factors of human capital flight in Nigeria. Using secondary data from 1990 to 2019, they looked at the relationship between human capital flight and variables such as life expectancy, infant mortality rate, population growth rate and Nigeria's unemployment rate. The auto-regressive lag model (ARDL) was adopted to estimate the empirical relationship among these variables. The results suggested a positive relationship exists between population growth and migration rates. A negative relationship was, however, observed between life expectancy and migration rate. The study also found that an increase in the infant mortality rate negatively impacted migration significantly. Therefore, an increase in the infant mortality rate lowered the migration rate. Finally, an increase in the unemployment rate increased migration; however, insignificantly.

Assessing the impact of migration on the economy of Nigeria, Adedokun and Karzanova (2019) examined recent trends in migration and opined that Underdevelopment is a symptom and a cause of migration not only in Nigeria but also in many developing countries across the globe. For Nigeria to drastically discourage its citizens from moving out of the country, it should, first and foremost, solve the problems or issues that make people migrate. This could be done by proportionately translating the country's economic growth to developmental projects, such as providing infrastructural facilities, ensuring the security of lives and properties, providing better jobs and equal chances to the youths, promoting gender equality and reducing high population growth rates through family planning or other

birth control measures. Until these issues are addressed, Nigerians will continue to migrate to other countries for better opportunities and living conditions.

Dimkpa (2019) used a qualitative research design, four migrants from Nigeria who had travelled to Europe through the Libya-Mediterranean route and the Push and Pull methodological framework developed by Everett Lee to investigate the migration account of Nigerians that went to Europe through the Libya-Mediterranean route and stopped in Sweden. Based on the Push and Pull model of Everett Lee, this study specified the reasons why migrants from Nigeria travel to Europe through the Libya-Mediterranean route, how they ended up in Sweden, and their decision to seek asylum in Sweden rather than other economies in Europe. The findings revealed that insecurity, political instability, terrorism, economic crisis, and stringent laws against homosexuality are the factors that could motivate Nigerians to travel to Europe for a better life through the Libya-Mediterranean route.

Relying on public opinion and focus group data obtained in West Africa through a descriptive research design, Kirwin and Anderson (2018) investigated the factors that cause West Africans to migrate. The study directed attention to Nigeria, the country of origin for twenty-five per cent of all migrants from Africa travelling through the Central Mediterranean route. Respondents were drawn from six West African countries of Burkina Faso, Cote d'Ivoire, Mali, Niger, Nigeria and Senegal. Economic factors were identified as the rationale for migration. However, family and patriotism were observed as reasons for respondents to desire to remain in their own countries. Evidence from the survey revealed that 50 per cent, 27 per cent and 27 per cent of Nigerians, Ivoirians and Senegalese, respectively, were interested in departing their countries of origin if given the opportunity. However, the number of Malians and Burkinabe that were also interested in emigrating if given the opportunity was less compared to Nigerians, Ivoirians and Senegalese. Furthermore, the findings showed that the class of Nigerians that were very likely to travel abroad were the urban and highly educated ones. From the role of religion in migration, Nigerian Muslims are less expected to desire to migrate abroad. In addition, the economic position did not exert a meaningful influence on the desire of Nigerians to migrate. Instead, the views of individuals on the strength of democracy in Nigeria are very strongly related to the desire of Nigerians to migrate abroad, followed by inadequate trust in indigenous security.

Omonijo, Obiajulu, Nnedum and Ezeokana (2011) delved into understanding the escalation of brain drain in Nigeria from a poor leadership point of view. The objective of the study was to find out if there was a relationship between poor leadership in Nigeria and the escalation of brain drain. Primary data were used. Simple percentages and ranking methods were used to analyze the data. Chi-square was used to test its hypothesis, and the result indicated that there is a relationship between poor leadership of the country and brain drain. It revealed that students were interested in travelling out of the country to developed societies after their studies. The findings of the study further identified some causes of brain drain, which included mass unemployment, poor salaries and poor conditions of service, mass poverty, and religious and communal crises. The study also identified some effects of brain drain on the nation's economy, including loss of human capital assets to manage various institutions in the country and loss of tax of migrated workforce to foreign countries. Solutions proffered included good leadership, improved worker salary structure, and good service conditions.

### **3. Methodology**

#### **3.1 Kinds and Sources of Data**

This study adopts an ex post facto research design by allowing the data variables to interact and speak for themselves. The data required for this study were annual time series on Nigeria population (POP), Net Migration (NTM), Political Stability Index (PSI), Youth Unemployment Rate (YUN), Inflation Rate (INF) and Government Effectiveness Index (GEI), Inflation (INF), and youth unemployment rates (YUN) were sourced from the World Bank (2023) and while inflation was used as proxy for cost of living and it was measured as consumer price index; youth unemployment rate was measured as a percentage of total labour force and used as proxy for a push factor for persons to look

for employment outside Nigeria. PSI and GEI were used as proxies for governance. This because these two indices are more closely related to serving as stay or push factors for emigrants. Once the political atmosphere is not stable and prone to crisis, people will tend to flee just as when government policies are not effective. These two were measured as indices ranging from -2.25 to +2.25 where -2.25 indicates the least performance and +2.25 indicates the highest performance and they were also sourced from the World Bank. All the data sets were measured from 1996 to 2021 based on data availability.

### 3.2 Model Specification

There exist pieces of empirical evidence regarding the link between net national migration and cost of living, unemployment, level of economic growth and governance. Such studies by Offor *et al* (2022) and Duru (2021) have linked these variables up. Thus, it is instructive to relate Net Migration (NTM) in a functional relationship with its determinants:

$$NTM = f(GEI, INF, POP, PSI, YUN) \quad (1)$$

Where, NTM = Net Migration, GEI= Government Effectiveness Index, INF = Inflation, POP = Nigerian population, PSI = Political Stability and Absence of Violence Index, YUN = Unemployment Rate. However, given that NTM and POP values are large, the study took semi-log of equation (1) by logging NTM and POP. Thus stochastic form of equation (1) is expressed as:

$$\ell NTM_t = \beta_0 + \beta_1 GEI_t + \beta_2 INF_t + \beta_3 POP_t + \beta_4 PSI_t + \beta_5 YUN_t + \mu \quad (2)$$

Where  $\mu$  is the error term that accounts for omitted variables. But to capture the relationship between NTM and the explanatory variables in a dynamic framework of Autoregressive Distributed Lag (ARDL) model, the specification will be modified. The generic form of ARDL  $(p, q_1, \dots, q_k)$  model is usually expressed as:

$$y_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^p \psi_i y_{t-i} + \sum_{j=1}^k \sum_{l_j=0}^{q_j} \beta_{j,l_j} x_{j,t-l_j} + \varepsilon_t \quad (3)$$

Where  $\varepsilon_t$  represents innovations,  $\alpha_0$  is a constant term, and  $\alpha_1$ ,  $\psi_i$  and  $\beta_{j,l_j}$  are respectively the coefficients of linear trend, lags of  $y_t$ , and lags of the  $k$  regressors  $x_{j,t}$  for  $j = 1, \dots, k$ . Thus following the generic form, equation (4) can be stated in asymmetric manner as:

$$\begin{aligned} \ell NTM_t = & \lambda_0 + \lambda_1 t + \sum_{i=1}^p \psi_1 \ell NTM_{t-i} + \sum_{j=0}^q \psi_2 GEI_{j-q} + \sum_{j=0}^q \psi_3 INF_{j-q} + \sum_{j=0}^q \psi_4 \ell POP_{j-q} \\ & + \sum_{j=0}^q \psi_5 PSI_{j-q} + \sum_{j=0}^q \psi_6 YUN_{j-q} + \xi_t \end{aligned} \quad (4)$$

Where  $\psi_1 - \psi_9$ , and  $\lambda_0 - \lambda_1$  are coefficients and constants respectively.

However, the model must capture the intertemporal dynamics since the study is interested in estimating the relationship between  $y_t$  on both its lags as well as the contemporaneous and lagged values of the  $k$  regressors  $x_{j,t}$ . This can be stated in the generic form as:

$$y_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^p \psi_i y_{t-i} + \sum_{j=1}^k \beta_j (1) x_{j,t} + \sum_{j=1}^k \beta_j (L) \Delta x_{j,t} + \xi_t \quad (5)$$

where the first difference notation is  $\Delta = (1 - L)$ . But given that equation (5) does not explicitly solve for  $y_t$ , it can then be referred to as a regression for intertemporal dynamics. Thus, the practical regression setting of equation (5) that uses theoretical coefficients can be specified as:

$$\begin{aligned} \ell NTM_t = & \lambda_0 + \lambda_1 t + \sum_{i=1}^p \beta_{0,i} \ell NTM_{t-i} + \beta_1 GEI_t + \beta_2 INF_t + \beta_3 \ell POP_t + \beta_4 PSI_t + \beta_5 YUN_t \\ & + \sum_{j=1}^k \varphi_{1,j} \Delta GEI_{t-j} + \sum_{j=1}^k \varphi_{2,j} \Delta INF_{t-j} + \sum_{j=1}^k \varphi_{3,j} \Delta \ell POP_{t-j} + \sum_{j=1}^k \varphi_{4,j} \Delta PSI_{t-j} + \sum_{j=1}^k \varphi_{5,j} \Delta YUN_{t-j} + \xi_t \end{aligned} \tag{6}$$

The conditional Error Correction Form and the Bounds Test can be specified as:

$$\Delta y_t = \alpha_0 + \alpha_1 t - \psi(1) EC_{t-1} + \left( \psi^*(L) \Delta y_{t-1} + \sum_{j=1}^k \beta_j(L) \Delta x_{j,t-1} \right) \tag{7}$$

From equation (7), it can be seen that the error correction term, typically denoted as  $EC_t$ , is also the cointegrating relationship when  $y_t$  and  $x_{1,t}, \dots, x_{k,t}$  are cointegrated. Given that, there may be no trend from cross examination, the study assumes no trend and restricts the constant inside the cointegrating equation, thus, specifies and estimates restricted constant with no trend. The model with restricted constant and no trend specification can be specified as:

$$\Delta y_t = \alpha_0 + b_0 y_{t-1} + \sum_{j=1}^k b_j x_{j,t-1} + \sum_{i=1}^{p-1} c_{0,i} \Delta y_{t-i} + \sum_{j=1}^k \sum_{l_j=1}^{q_j-1} c_{j,l_j} \Delta x_{j,t-l_j} + \sum_{j=1}^k d_j \Delta x_{j,t} + \varepsilon_t \tag{8}$$

$$\text{Whereas: } EC_t = y_t - \sum_{j=1}^k \frac{b_j}{b_0} x_{j,t} - \frac{\alpha_0}{b_0} \tag{9}$$

With  $H_0 : b_0 = b_j = \alpha_0 = 0, \forall_j$

Where  $\alpha$  is a vector and the variables in  $x_t$  are allowed to be purely I(0) or I(1);  $\alpha$  is a Constant  $b$ ,  $c$  and  $d$  are coefficients  $j = 1, \dots, k$ ;  $p, q$  are optimal lag orders and  $\varepsilon_t$  is a vector of the error terms. Thus, the asymmetric error correction model can be specified as:

$$\begin{aligned} \Delta \ell NTM_t = & \sum_{i=1}^p \beta_1 \Delta \ell NTM_{t-i} + \sum_{i=1}^q \beta_2 GEI_{t-i} + \sum_{i=1}^q \beta_3 INF_{t-i} + \sum_{i=1}^q \beta_4 \Delta \ell POP_{t-i} \\ & + \sum_{i=1}^q \beta_5 \Delta PSI_{t-i} + \sum_{i=1}^q \beta_6 \Delta YUN_{t-i} + \lambda EC_{t-1} + \varepsilon_t \end{aligned} \tag{10}$$

Where  $\lambda EC_{t-1}$  is a component of speed of adjustment towards the equilibrium path of the model and  $\varepsilon_t$  is the error term.

### 3.3 Estimation Procedure

In order to estimate the result of the study, unit root tests for stationarity were conducted using Augmented Dickey Fuller (ADF). Since ARDL utilizes lag values, the optimal lag length for the model was estimated and the bounds test was carried out to ascertain whether there was a long run relationship among the variables. Having determined the cointegration of the model, the short run ECM and the long run ARDL were estimated. Finally, some post estimation tests aimed at gauging the goodness of fit of the model were carried out such as normality test, Ramsey test, heteroscedasticity and serial correlation test.

## 4. Results

### 4.1 Descriptive Statistics

**Table 1: Descriptive Statistics**

	POP	PSI	YUN	INF	GEI	NTM
Mean	157.3812	-1.7290	10.3064	12.5367	-1.0274	349.1154
Median	154.4900	-1.8692	9.6175	12.1597	-1.0145	12802.00
Maximum	213.4000	-0.5864	13.6490	29.2683	-0.8927	145917.0
Minimum	110.9600	-2.2111	9.3410	5.3880	-1.2146	-103989.0
Std. Dev.	31.7443	0.4234	1.3096	4.9680	0.0800	55820.98
Skewness	0.2055	1.3442	1.4500	1.3882	-0.7230	0.238982
Kurtosis	1.8029	3.8920	3.7016	6.0004	2.9709	3.082496
Jarque-Bera	1.7354	8.6916	9.6440	18.1028	2.2661	0.254860
Probability	0.4199	0.0130	0.0081	0.0001	0.3220	0.880355

**Source: Extract from E-views 10**

Table 1 describes Nigeria's Net Migration (NTM) and five other variables most likely to affect the dependent variable NTM. The Population of Nigeria (POP) is measured in hundreds of millions of people. Political Stability and Absence of Terrorism Index (PSI) and Government Effectiveness Index (GEI) are indices that range from -2.5 to +2.5. Youth Unemployment (YUN) and inflation (INF) are rates measured in percentages.

It can be observed that the variables under investigation are normally distributed given their probability and Jarque-Bera statistic values except for PSI, YUN and INF whose probability value of 0.0130, 0.0081 and 0.0001 respectively are less than the 0.05 critical value. However, non-normality of the distribution may not pose any problems for quality of the result since most of the variables are used in the model in their log forms to reduce influence of the non-normality. Again, it can be observed that, all the variables are positively skewed indicating that they have a tendency to increase except GEI which exhibit a contrary tendency. The positive tendencies for PSI is desirable for progress since PSI is necessary for investment and growth. But for INF to exhibit positive tendencies is a pointer to high cost of living with attendant welfare diminishing consequences. Also, for the POP and GEI, their kurtosis is each less than 3 which is the statistically set threshold and they can be said to be platykurtic (distribution is not peaked) and the rest of the variables are leptokurtic (the distribution is peaked).

Nigeria's population averaged about 157.38 million people with a standard deviation of 31.74 implying that the value of the variable has wondered widely about the mean. The maximum population is 213.4 million during the period and a minimum value of 110.96 million. Meanwhile PSI has a mean value of -173 indicating that it has predominantly been low with a standard deviation of 0.42 implying that its value has wondered around the mean. The country's highest value for the index was achieved at -0.59.

Similarly, YUN in Nigeria has a mean value of 10.3% with 9.62% and 13.65% as minimum and maximum values as respectively. This shows that the level of youth unemployment in Nigeria is high. During the same period too INF maintained a mean value of 12.54% with a maximum value of 29.27% and minimum value of 5.39% and a standard deviation of 4.97 which implies the variable has wondered widely. The performance of GEI is equally not good. Both the maximum and minimum values are negative with a standard deviation of 0.08. This means that the variable has not wondered and has remained low. The minimum NTM was recorded as -103,989 indicating the highest number between immigrants and emigrants in Nigeria. The mean NTM is 349 persons with a standard deviation of 55,820 indicating that the movement of people into Nigeria and out of Nigeria has fluctuated widely.

**4.2 Pre-estimation Tests**

**Table 2: Unit Root**

Variables	ADF at level	Prob. Value	ADF at 1 <sup>st</sup> Difference	Prob. Value	Order of Integration
LNM	-1.0524	0.7131	-5.6163**	0.0002	I(1)
LPOP	-2.9981**	0.0491	-----	-----	I(0)
PSI	-1.7446	0.3977	-4.5859**	0.0014	I(1)
YUN	-2.9862	0.8241	-4.6220**	0.0000	I(1)
INF	-6.2462**	0.0000	-----	-----	I(0)
GEI	-4.1271**	0.0039	-----	-----	I(0)

**Source: Extracted from E-views 10**

**Note:** The ADF unit root tests results are reported here at 5% significance level. The asterisks (\*\*) indicate that the variable is significant otherwise it is not just as the lines (-----) indicate that stationarity was achieved at levels and so there are no results at first difference.

The (ADF) unit root is tested against the null hypothesis that, the variable under investigation has unit root. Thus a variable is adjudged stationary when the probability value of its corresponding t-statistics is less than 0.05. In Table 2, for every t-statistic value whether at levels or first difference the asterisks (\*\*) indicate that the variable is stationary otherwise, it is not. Therefore, it can be inferred that, all the variables were stationary at first difference except LPOP, INF and GEI which were stationary at levels. Thus, there is mixed order of integration of the variables which is still very appropriate for the ARDL approach.

**4.3 Optimal Lag Selection**

Dynamic models stand out among static models because of their incorporation of lags and firm conviction that lags of the dependent variable could as well be useful in explaining its present or future behaviour (Gujarati, 2013). The use of lags also come with the problem of loss of degree of freedom and the need to obtain efficient estimates, there is need for optimal lag selection. Based on Akaike Information Criteria (AIC) the optimal lag length for the model was automatically selected to be (2,0,0,1,0,0).

**4.4 Bounds Test for Co-integration**

Table 3 is a test of bounds test to confirm that the variables are cointegrated and will not diverge with the passage of time.



**Table 3: Bounds Test for Co-Integration Result**

Level of Significance	F- Statistic Value	Lower Bound I(0)	Upper Bound I(1)
10%		2.75	3.79
5%	18.35	3.12	4.25
2.5%		3.49	4.67
1%		3.93	5.23

Source: Extract from E-views 10

The outcome in Table 3 indicates that, at the 5% level of significance, the F-statistic value of 18.35 exceeds both the lower and upper bounds of 3.12 and 4.25 respectively. This leads to the conclusion that there is a long run relationship among the variables and that the null hypothesis of no level relationship is rejected.

#### 4.4 Short-run Results

**Table 4: Short-run Results**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5614.26	459.293	-12.2237	0.000
@TREND	-32.553	2.66350	-12.2220	0.000
D(LNM(-1))	1.409	0.17040	8.27146	0.000
D(INF)	0.084	0.02179	3.89339	0.001
ECM(-1)*	-0.829	0.08003	-10.3611	0.000
R-squared	0.9159	Adjusted R-squared	0.8983	
Durbin-Watson stat	1.976485			

Source: Extract from E-views 10

A look at Table 4 shows that within a year, there is about 83% chance that in an event of any temporarily set back, the model will revert to the equilibrium path, given the ECM (-1) factor of the model. ECM (-1) coefficient (-0.8293) is correctly signed and statistically significant given that the probability value associated with its coefficient.

It should be noted that, negative net migration implies that more people have left Nigeria than the number that came into the country. It can be observed that, the lag of NTM has a positive a significant influence on *Japa*, implying that, in the short run, previous levels of emigration may influence the current level of emigration significantly. It can also be observed that inflation which is a proxy for cost of living has a very positive and significant influence on net migration. This implies that, during the time under review, the cost of living in Nigeria significantly affect the level at which people *japa* out of Nigeria.

It can also be inferred that the Durbin-Watson statistic value of 1.9765 which can easily be approximated to 2 indicate that, the model is free from the problem of autocorrelation. Equally, the high R-Square (0.9159) and R-Square adjusted (0.8983) values show that, about 90% of the variations in the level of *japa* in Nigeria is explained by the independent variables of the model.

#### 4.5 Long-run Results

**Table 5: Long-run Results**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPOP	853.6749	98.5871	8.6591	0.0000
YUN	1.2337	0.2379	5.1861	0.0001
INF	0.0442	0.0135	3.2759	0.0055
GEI	1.1429	0.4664	2.4507	0.0280
PSI	-1.2541	0.3057	-4.1024	0.0011

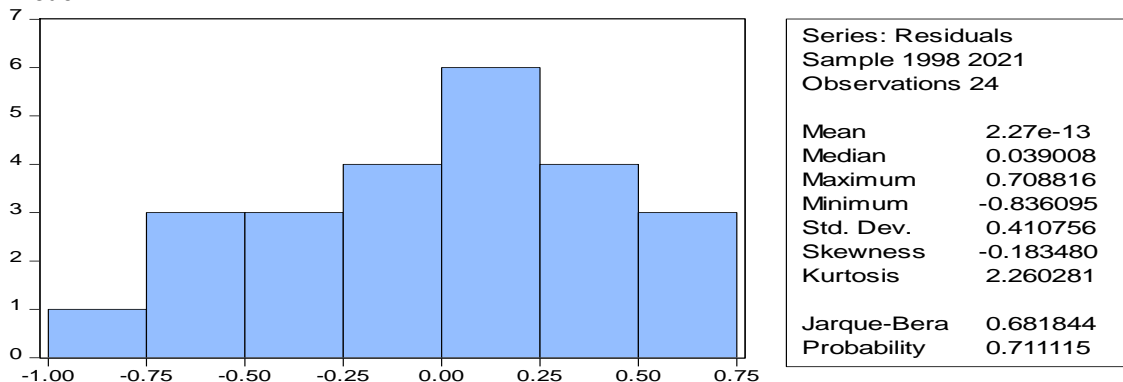
Source: Extract from E-views 10

Table 5 indicates that a percentage change in LPOP will result to 85367.5 % increase in the number of emigrants in Nigeria. This may be due to the fact that as Nigeria’s population grows, more people are likely to leave the shores of the country. Similarly, YUN, INF, and GEI have very significant effects on NTM in Nigeria. This shows that they are serious push factors for the *japa* syndrome in Nigeria in the long run. The level of youth unemployment, the cost of living and poor levels of government effectiveness constitute very serious push factors for emigration in Nigeria. This finding is in concordance with Popogbe and Adeosun (2020), Dimkpa (2019), Kirwin and Anderson (2018), Duru (2021 and Offor, et al (2022). However, in the long run, PSI constitutes a discouraging factor for *japa* in the country. This shows that improvements in political stability and absence of terrorism will discourage a lot of Nigerians from leaving the country in search of greener pastures.

**4.7 Post Estimation Tests**

**4.7.1 Normality Test**

This subsection deals with the post estimation analysis of the model with a view to ascertaining that the model was never a spurious and as such Figure 2 shows the residual normality test for the model.



**Figure 1: Normality Test Graph of the Variables**

Source: Extract from E-views 10

The residual normality graph as shown in Figure 3 confirms that the residuals are normally distributed given their probability value of 0.9532 which is higher than the 0.05 critical value. The Kurtosis of 3.2349 which is higher than the Kurtosis threshold value of 3 shows that the distribution of the residuals is leptokurtic (that is, it is peaked). Implying that the series contain some outliers.

**4.7.2 Goodness Fit Tests**

To further confirm whether the model was properly fitted and that the residuals did not misbehave; Ramsey, Heteroscedasticity and Serial Correlation tests were conducted and the summary of the results are as shown in Table 6.

**Table 6: Ramsey RESET, Heteroscedasticity and Serial Correlation Tests**

Test Type	Ramsey RESET		Heteroscedasticity		Serial Correlation LM	
	Value	Prob.	Value	Prob.	Value	Prob.
t-statistic	----	-----	----	----	----	----
F-statistic	8.54650	0.1048	2.2833	0.0804	0.5620	0.5844
Obs*R-squared	----	----	14.2748	0.1129	2.0554	0.3578
Scaled Exp. SS	----	----	3.0608	0.9618	----	----

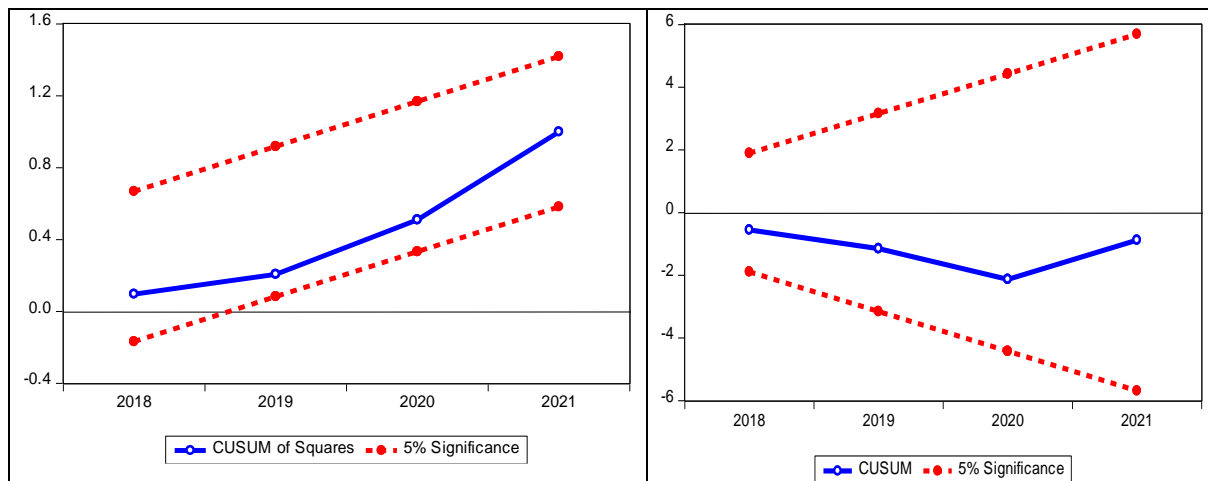
Source: Extract from E-views 10

Note: The dashes (----) in Table 6 show that the statistic is not applicable for that particular tests.

The results of the post estimation tests in Table 6 are meant to ascertain the goodness of fit of the model used in the study. It is clear from the table that, the relationship between LNTM and its explanatory variables was correctly specified given that both the t-statistics and the F-statistic values of the Ramsey regression equation specification test (RESET) have their probability values as 0.1048. Once the probability value is greater than 0.05 critical value, the relationship is correctly specified otherwise it is not. Similarly, the results of the heteroscedasticity test indicate that the residuals possessed constant variance which is in line with the stochastic process and as such can be adjudged to be homoscedastic. This conclusion is predicated on the probability values of the F-statistic (0.0804), observed R-squared (0.1129) and Scaled explained sum of square (0.9618) which are greater than the 0.05 level of significance. Finally, the results of the serial correlation test indicate that no case of autocorrelation was observed in the residuals most especially that, the probability values of the F-statistic is 0.5844 even though that of the observed R-squared is 0.3578. These post estimation results confirm that the model performed well and aptly fits the data.

#### 4.7.3 Stability of the Model

To also confirm whether the residuals were stable in their state of constant variance, recursive tests were conducted and the results are as shown in Figures 3.



**Figure 2: Graphs of CUSUM of squares and CUSUM**

A look at Figure 3 shows that the model is very stable since neither of the middle curves crossed over the 0.05 level of significance lines on either sides both in the Cumulative Sum of squares graph and in the Cumulative Sum graph.

#### 5. Conclusion and Recommendations

Based on the empirical results, it can be concluded that the *japa* syndrome in Nigeria is fast becoming a threat to the domestic economy. This is due to high population growth, high cost of living, high level of youth unemployment, and low levels of government ineffectiveness in engendering sound policies. The anomaly can be addressed if the following policy measures are adapted.

- i. The government at all levels must take deliberate actions towards reducing the level of population growth in Nigeria. This may reduce the pressure on the available resources in Nigeria and may reduce the level of *japa* in the country.
- ii. To curtail the level of unemployment in Nigeria, the government of Nigeria should pay attention closely to technical education which enables graduates to venture into self-employment.
- iii. The monetary and fiscal policy authorities in Nigeria should find ways of reducing managing liquidity in the economy in a manner that inflation in Nigeria is reduced to less than double digit target to ease the cost of living.

- iv. The government effectiveness index is generally low and it implies that governance in Nigeria is ineffective and inefficient. Thus, the government must ensure that the laws of the land are obeyed to the letter and that the principle of the rule of law truly prevails in all facets of life in Nigeria.
- v. The government should also execute the war against terrorism and ensure political stability with every sense of commitment and sincerity. This will curtail the level of insecurity in the country that will attract more foreign investment and immigrants and curtail the level of emigration in Nigeria.

## References

- Adedokun O. A., & Karzanova I. V. (2019). *Impact of migration on the economy of Nigeria: Recent trends*. Peoples' Friendship University of Russia Bachelor Thesis in International Migration and Ethnic Relations, Malmo University.
- Asue E.A., Ijirshar V. U., & Ikyaaator J. V. (2022). Assessment of good governance indicators on the pervasiveness of shadow economy: Empirical Insights from Nigeria. *Journal of Public Administration, Finance and Law*. 26 (2) 15 - 30
- Bashorun, B. (2023). *Migration Trajectories: A Case Study of High-Skilled Youths in Nigeria* Central Bank of Nigeria (2023), Inflation Rates (Percent). Accessed at: <https://www.cbn.gov.ng/rates/inflrates.asp>
- Dimkpa, P. (2019). *Africa-Europe migration: A qualitative analysis of Nigerian Migration to Europe via the Libya-Mediterranean route*. An Unpublished Master's Thesis in African Studies of the Dalarna University Centre for African Studies.
- Duru, I. U. (2021). Examination of the causes and consequences of international migration in Nigeria. *Asian Development Policy Review*, 9(4)180-193. DOI: 10.18488/journal.107.2021.94.180.193
- Emefiele, G. I. (2020). The Central Bank of Nigeria Communique No. 129 of the Monetary Policy Committee meeting on Monday 23<sup>rd</sup> and Tuesday 24<sup>th</sup> March, 2020. Accessed at: [www.cbn.gov.ng/out/2020/mpd](http://www.cbn.gov.ng/out/2020/mpd)
- Emeghara, E. E. (2013). Brain drain as a clog in the wheel of Nigeria's development: the university education system in focus. *International Journal of Development and Management Review (INJODEMAR)*. 8 (1) 110-121
- Kahneman, D. & Tversky, A. (1979). Prospect theory: an analysis of decisions under risk. *Econometrica*. 47 (1) 263-291
- Kirwin, M., & Anderson, J. (2018). Identifying the factors driving West African migration. West African Papers, No.17. Paris: OECD Publishing.
- National Bureau of Statistics (2017), Labour Force Statistics Vol 1: Unemployment and Underemployment Report. Accessed at: [https://www.nigerianstat.gov.ng/pdfuploads/q1q3\\_2017\\_unemployment\\_report\\_VOLUME\\_1.pdf](https://www.nigerianstat.gov.ng/pdfuploads/q1q3_2017_unemployment_report_VOLUME_1.pdf)
- National Bureau of Statistics (2020), Labour Force Statistics: Unemployment and Underemployment Report (Q4 2020). Accessed at: <https://nigerianstat.gov.ng/elibrary/read/1238>
- Offor, P.U., Egbulonu, K.G., Ikwuemezie, A. & Njoku, A.I. (2022). Unemployment and Nigeria's Human-Capital Flight (1990 – 2020): An Empirical Investigation of a Modelled Case Study of Recruitment of Nigerian Doctors by Saudi Arabia. *Asian Journal of Economics, Business and Accounting*, 22(17) 81-97
- Okunade, S.K. & Awosusi, O.E. (2023). The *Japa* syndrome and the migration of Nigerians to the United Kingdom: an empirical analysis. *Comparative Migration Studies*, 11 (27) 16-26.
- Omonijo, D.O., Obiajulu, A., Nnedum, U. & Ezeokana, J. (2011). Understanding the Escalation of Brain Drain in Nigeria From Poor Leadership Point of View. *Mediterranean Journal of Social Sciences*, 2(3):434.
- Popogbe, O. & Adeosun O. T. (2022). Empirical analysis of the push factors of human capital flight in Nigeria. *Journal of Humanities and Applied Social Sciences*, 20 (10) 81-98
- Shiller, R.J. (2005). *Irrational exuberance*, (2nd edition). Princeton University Press, Princeton
- Shin, Y., Yu, B. & Greenwood-Nimmo, M. (2014). *Modelling Asymmetric Cointegration and Dynamic Multipliers in a Nonlinear ARDL Framework*. In: Horrace, W.C. and Sickles, R.C., Eds., *Festschrift in Honor of Peter Schmidt: Econometric Methods and Applications*, Springer Science & Business Media, New York, 281-314. [https://doi.org/10.1007/978-1-4899-8008-3\\_9](https://doi.org/10.1007/978-1-4899-8008-3_9).