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Patterns and Micro-Drivers of International Emigration in Nigeria

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Abstract. The study attempts to unfold the determinants of international migration from Nigeria to other countries by using 2009 Nigeria Migration Survey data by World Bank (2011). It also employs econometric techniques of linear probability and binary probit models. The findings indicates that individual and household characteristics as well as economic and geographical factors play significant roles in making Nigerians to migrate abroad. The individual characteristics are gender (if male), age, marital status and education years, while household size is the only significant factor under household characteristics. The amount of remittance is the only significant economic determinant. The statistically significant geographical factors include locality (if urban) and geopolitical zones (if south-east, south-south, south-west and Lagos). Second, the same factors are the determinants of international migration to OECD and African countries, albeit they are stronger in influencing migration to African countries than to OECD countries. However, amount of remittance has positive effect on international migration to OECD countries but it is negative on international migration to African countries. Thus, the policy implication is that any international migration policy should target the above determinants of international migration in order to contain it.
Keywords. International migration, Remittances, Probit model, Policy implications.
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1. Introduction

Until the Brussels Declaration and Programme of Action in 2001, migration has been overlooked as one of the debatable development issues globally despite its huge implications for development. Migration, especially international one, remains critical to national progress and prosperity for it comes with both economic gains and/or losses to both source and destination countries (United Nations Development Program (UNDP), 2009 and United Nations Department of Economics and Social Statistics (UNDESA, 2012). It is further observed by UNDESA (2012) that international migrants contribute so much to the growth and development of their home countries as they remit their accumulated financial and human capital. This would go a long way in boosting foreign investment of their countries of origin, create wealth and generate multitude of employment opportunities.

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The home-country also benefits from technology transfer, peace-building, poverty reduction, trade relation and establishment of new businesses by the returned migrants. This is apart from the benefits accruable to individual families of the migrants, which promote their economic and social well-being and contribute to improved education and health outcomes (Adams, 2006; International Organization for Migration, 2011 and Ratha, Mohapatra & Scheja, 2011).

However, international migration can deleteriously impact the development of countries of origin through loss of essential human resources, often referred to as "brain drain", and by way of potential depletion of the national labour force due to movements at all skill-levels as well as worsening of business environment. On the other hand, migrants can contribute to economic growth and development in receiving countries through entrepreneurial capacities and filling the job gap, which indigenous people are unwilling to take up, in the labour market. Immigration boosts the productivity of the receiving countries via innovation and freeing up the local workforce to take up higher productive jobs (Ratha, Mohapatra & Scheja, 2011).

International migration reflects the development situations in both source and destination countries. Emigration is a manifestation of underdevelopment and destitution or it is 'push factors' (like poverty, income inequality, political instability and population pressure), which compel people to migrate from the source countries. It is, however, a reflection of progress, better living standards and prosperity or 'pull factors' (like equitable opportunities, political stability and affluence) that attract people to destination countries (UNDESA, 2012).

It is also note-worthy that there are two major patterns of international migrations: from developing world to developed one and between developing countries; as it will be revealed by available statistics subsequently. There has been a drastic rise in absolute number international migrants from 155 and 175 million to 232 million over the periods 1990-2013 and 2000-2013, representing 77 million or 50 per cent and 52 million or 33 per cent increases respectively (UNDESA, 2013). In 2013, international migrants represent around 3.2 per cent of the global population in contrast to 2.8 per cent in 2000; and most of which (about 59 per cent) reside in developed regions of Europe, North America, Oceania and developed regions of Asia whereas the rest (about 41 per cent) live in other developing regions of Asia, South America and Africa (UNDESA, 2013).

In terms of net international migration, developed regions record population gains from positive international migration as against population losses in developing countries from negative international migration over the period 1950-2010. Furthermore, UNDESA (2013) reports that net international migration to developed world rose to 3.5 million per year in 2000-2010 from 2.5 million per year 1990-2000. Africa is the second region, after Asia, with highest negative net international migration of 0.4 million per year for the period 1990-2010. Additionally, UNDP (2013) reports that net immigration and net emigration rates of Nigeria hover around 0.6 and 0.7 per cents per 1000 people in 2010 respectively, with net international migration of 0.4 per cent per 1000 annually for the period 2005-2010.

This study sets out to examine the determinants of international migration in Nigeria using the World Bank (2011) migration dataset. The study is timely and relevant given the number of lives lost to illegal emigration from Africa to OECD countries and amount of remittances sent home by migrants. The remaining part of the paper is organized as follows. Section 2 presents stylized facts about migration in Nigeria and section 3 reviews related literatures. Section 4 contains methodology of the study while section 5 presents and discusses the results. Finally, section 6 concludes the paper with policy implications.

2. Stylized Facts about International Migration in Nigeria

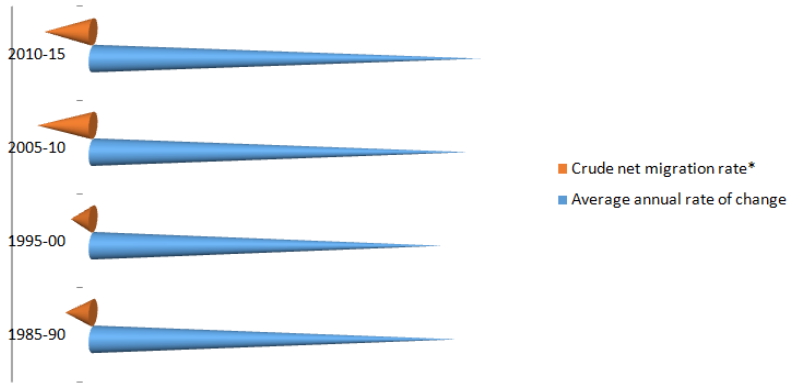
This section provides an overview of the migration in Nigeria over some periods of time and it is also matched against some other socioeconomic variables of the country.

For example, Table 1 analyses migration as an indicator of population distribution in Nigeria. It reveals that the average annual rate of population growth slightly rises to 2.7 per 1000 for the period 2010-15 from 2.61 per 1000 for the period 1985-90 representing annual rate of natural increases of 26.31 and 28.10 over the same periods. Nigeria has been experiencing negative international net migrants leading to population loss over time. Crude net migration hovers around -0.20 per 1000 in 1985-90, which rose to -0.35 per 1000 for the period 2010-15 resulting in -91,000 and -300,000 net migration over same periods.

Table 1. *Migration andpopulation indicators of Nigeria*

Time Interval	Average annual rate of pop change	Annual rate of natural increase*	Crude net migration rate*	Total net migration ('000)
1985-90	2.61	26.31	-0.2	-91
1995-00	2.5	25.16	-0.16	-95
2005-10	2.69	27.29	-0.4	-300
2010-15	2.78	28.1	-0.35	-300

Note: * Per 1,000 population. **Source**: UNICEF, (2014); Authors' Construction



Graph 1: *Trend ARC-CNM correlation*

Figure 1 graphically depicts the relationship between average annual rate of population change (ARC) and crude net migration rate over time (CNM). It shows that there is direct link between them.

Table 2. *Migration and other socioeconomic indicators in Nigeria*

Time Interval	Net Migration	GNI Per Capita (Constant PPP US$)	Life Expectancy*
1980-84	-671,640	1,748	45.73
1985-89	-91,407	1,306	45.83
1990-94	-95,769	1,382	45.41
1995-99	-95,027	1,411	45.36
2000-04	-170,000	1,473	47.36
2005-09	-300,000	1,890	49.99
2010-14	-300,000	3,396*	52.4

Note: *It is the authors' computation from the World Bank (2014) dataset.
Source: World Bank (2014).

Table 2 indicates the nexus among net migration, GNI per capita and life expectancy at birth. It is shown that while GNI per capita has been rising since 1985 to 2014; negative net migration has also been on the increase since 1985 but remained constant over the periods of 2005/09 and 2010/2014, Life expectancy has however stagnated around 46 years until 2005-2014 when it rose to above 50 years. This suggests that the increase in per capita has not improved the well-being of the masses, and as a result, they increasingly migrate to better places.

3. Literature Review

3.1. Theoretical Underpinnings

Massey, *et al.* (1993) review major theories of international migration and categorize them into two broad camps: theoretical models expounding the origination of international migration and; theories explicating the perpetuation of such a migration. Under initiation theories, there are Neo-classical economic theory, new economic theory, dual labour market theory and world system theory. Neo-classical theory suggests that spatial differences in wages, and other terms and conditions of employment coupled with migration cost cause migration. Borjas, (1990) and Bauer & Zimmermann, (1998) observe that the differentials are mostly due to spatial variations in supply of and demand for labour, and other factors (like labour productivity, education, experience and so on). New economic theory, as propounded by Stark & Levhari, (1982) and others in Massey, *et al.* (1993), considers migration as an outcome of collective decision by related people to not only maximize expected income but also to minimize risk and other constraints. Diversify allocation of household resources serves as an effective tool to minimize risks to their economic wellbeing. To do so, some family members engage in domestic economic activities while; others may work in foreign labour markets where wages and employment conditions are better than in the home country.

Dual labour market theory, proposed by Piore (1979) as cited in Massey *et al.,* (1993), views international migration as manifestation of structural requirements of developed economies. Deficiency in the supply labourin developed nations is the root of labour of immigration. Piore, (1979) corroborate also that immigration is rather an end-result of pull factors in destination countries than push factors in source countries. World system theory, by Portes & Walton (1981) and also in Massey *et al.,* (1993), perceives migration as an inevitable upshot of economic globalization and market penetration across national boundaries. Due to desire for higher profits and greater wealth, owners and managers of multinational corporations enter poor countries on the periphery of the world to source land, raw materials, labour, and new consumer markets.

With respect to perpetuation theories of migration, there are network theory and institutional theory clarifying why international migration persists. Network theory hypothesises that migrant networks increases the chances of international migration as they cut down the costs and risks of migration and raise the present of migration. According to Massey *et al.,* (1993), "Migrant networks are sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship, and shared community origin". When the networks expand, the cost of migration falls down; leading to cheaper access to foreign opportunities and higher returns. Whereas, institutional theory posits that private institutions and voluntary organizations are bound to spring up to satisfy the demand created by an imbalance between the migrants from source counties and the limited number of immigrant visas that the destination countries typically offer (Massey *et al.,* 1993). The stricter the migration policy and barriers in the receiving countries, the more likely would be the emergenceof a black market in migration. The illegal immigrants may be exploited and victimized when thisunderground market becomes stronger. As a result, voluntary humanitarian organizations may also come out in developed countries to enforce the rights and improve the treatment of legal and undocumented migrants. The NGOs supporting and protecting legal and undocumented migrants may be institutionalized, which further loosens the strict immigration policy.

3.2. Empirical Studies

There are burgeoning empirical studies on the determinants of international migration in both developed and developing countries across the world. While the former pays more attention to inflow of migrants; the latter focuses on the outflow of the migrants given the variation in their levels of economic development.

In a cross-country study of determinants of international migration in 21 developed countries for the period 1998-2010, Sprenger (2013) establishes that both economic and non-economic factors are significant in determining migration flows. The significant economic factors are differences in GDP per capita, unemployment rates, openness and participation rates of women between receiving and sending countries while the non-economic determinants include physical distance, border, common language and networks of migrants. Similarly, Mayda (2005) explore economic and non-economic determinants of migration inflows into fourteen OECD countries by country of origin, between 1980 and 1995. The results confirm the findings of Sprenger (2013), that both economic and non-economic factors significantly determine international migration.

Valenta (2016) in his study, he compared migration system in European Union and Gulf cooperation council. The findings reveal that economic forces are major drivers of migration in the two regions. Also the GCC countries allow temporary migrants but have more restrictive practices regarding offering permanent jobs and citizenship than the EU's. Correspondingly, Bernard, Bell & Charles-Edwards (2016) in their analysis of age migration pattern of migration between Australia and Great Britain found that in Great Britain there is strong association between migration of young and adult ages while in Australia a weaker influence of life course transition contributed to a protracted migration age profile.

Mberu & Pongou (2016) studied drivers and patterns of migration in Cameroun with a specific focus on rural-urban migration and found that search for a better is the major drivers of migration. Flahaux & Haas (2016) studied trend, pattern and drivers of migration and Africa and found that the drivers of migrants out of Africa include poverty, violence and under-development of the region and the trend is likely to continue in the future.

Kim & Cohen (2010) examine the determinants of international migration flows to and from industrialized countries for the period 1950-2007. They discover that population of destination and origin, infant mortality rate of destination and distance between capital cities are the significant drivers of outflows of migration while the four variables mentioned and infant mortality rate of origin and land area of destination are the significant determinants of migration inflows. Also, the results suggest further that young age in destination leads to lower inflows whereas young age in origin leads to higher inflows. In a discourse of microeconomic determinants of emigration and return migration among highly skilled people from three Pacific countries, Gibson & McKenzie, (2009) find out that age, risk aversion, patience and choice of subjects in secondary school are the significant and strong determinants of decision to emigrate while family and lifestyle reasons are the significant determinants of decision to return.

With reference to India, Parida & Madheswaran (2011) uncover that individual characteristics (age, marital status and human capital endowment) and household features (size of household, caste and land possession) have strong effect on both decision to migrate and send remittance. Chort & de la Rupelle, (2015) investigate the determinants of regional pattern of Mexico-US migration flows for the period 1995-2012. Their findings imply that over and above traditional economic determinants, social (share of homicide) and climatic factors (annual rain fall and number of hurricanes and tropical storms) are essential in influencing international migration.

Farooq, *et. al.,* (2014) ascertain, with respect to Pakistan, that disparities in paying jobs, educational facilities, rural setting, and health and marketing facilities are the significant drivers of decision to migrate abroad. The patterns, trends and determinants of migration in five African countries (Burkina Faso, Ghana, Nigeria and Senegal) has been analysed by Shimeles, (2010). The empirical findings reveal that sub-Saharan Africa has the least rate of emigration in the world and majority of them migrate to other African countries. Bad socioeconomic conditions cause higher rate of emigration by highly skilled individuals.

Baizan & Gonzălez-Ferrer (2014) examine the determinants of Senegalese migration to Europe. The results show that household strategy to diversify resources, counter downward social mobility, availability of personal networks and human capital endowment are the significant factors determining Senegalese migration to Europe. Darkwah & Verter, (2014) assess drivers of international emigration in Nigeria using time-series data for the period 1991-2011. Their findings signify that the level of unemployment, migrants' remittances and population growth have significant effects on decision to migrate abroad.

4. Econometric Methodology

4.1. Theoretical Model

Borjas' (1991) migration model is adopted in this study and, the model, which is Neoclassical in nature, states that decision to migrate happens if the destination country values the migrant's characteristics, net of migration costs, more than the sourcecountry given the migrant'ssocioeconomic characteristics or skill endowment. The mathematical settings can be derived as follows:

Borjas begins with a person's mean earning in both source and destination countries (Bodvarsson & Van den Berg, 2013).

$$lnw_0 = \mu_0 + \varepsilon_0 \text{ (Source) and } lnw_1 = \mu_1 + \varepsilon_1 \text{ (destination)} \quad (1)$$

Where μ_0 and μ_1 are the mean income in the home country respectively. $\varepsilon_0$andε_1 are error terms, uncorrelated with μ, with a mean of 0 and variances of σ_0^2 and σ_1^2 indicating that some people may earn less than the mean income of the country. In the Borjas' model, σ_0^2 and σ_0^2 are the parameters measuring income inequality in the source and destination countries.

Suppose that C is the cost of migration, migration is more likely to occur if $w_1 > w_0 + C$ or $\left[{}^{w_1}/_{(w_0 + C)}\right] > 1$.By taking log, the decision to migrate takes place when:

$$I \equiv lnw_1 - \ln(w_0 + C) > 0 \quad (2)$$

Note that is $\ln(w_1 + C)$ approximately equal to $lnw_0 + {}^{C}/_{w_1}$. Borjas defines ${}^{C}/_{w_0}$ as π and refers it as "time equivalent" measure of the costs of migration.He assumes it to be constant across all individuals in the home country. Thus, equation (3) can be derived from equation (2), that migration is likely to occur if:

$$I = (\mu_1 - \mu_0 - \pi) + (\varepsilon_1 - \varepsilon_0) > 0 \rightarrow (\varepsilon_1 - \varepsilon_0) = -(\mu_1 - \mu_0 - \pi) \quad (3)$$

Given the random elements in earnings, the emigration rate can be standardized to a Z value by noting that P is equivalent to (Bodvarsson & Van den Berg, 2013):

$$\Pr\left[Z > \frac{-(\mu_1 - \mu_0 - \pi)}{\sigma_v}\right] = 1 - \Phi(Z) \quad (4)$$

Where σ_v is the standard deviation of $(\varepsilon_1 - \varepsilon_0)$, Φ(Z) is the cumulative distribution function for Z, and σ_v=$\sqrt{\sigma_0^2 + \sigma_1^2 - \rho\sigma_0\sigma_1}$ under specific assumptions about the distributions. The emigration rate therefore relies on mean earnings in each country, each country's earnings variance, relative migration costs, the degree of skills transferability across borders, and the interaction of the source and destination country earnings variances.

4.2. Empirical Model Specification

In the light of the theoretical model discussed above, the structural form of the model for the study is specified as follows:

$$mig_i = (age_i, hz_i, gd_i, ms_i, bp_i, ws_i, ed_i, rg_i, lc_i, rm_i) \quad (5)$$

Equation (5) can be re-specified as follows:

$$mg_i = \lambda_1 + \chi_2 age_i + \chi_3 bp_i + \chi_4 ed_i + \chi_5 gd_i + \lambda_6 hz_i + \lambda_7 ms_i + \lambda_8 lc_i + \lambda_9 rm_i + \lambda_{10} rg_i + \lambda_{11} ws_i + \mu_i \quad (6)$$

Table 3. *Definitions of Variables*

Variables	Definitions
Mg	Decision to Migrate (outflow)
Age	Age of the migrant
Edu	Education years of the migrant
Gd	Gender of the migrant
Hz	Household size of the migrant
Ms	Marital status of the migrant
Lc	Locality of the migrant (rural/urban)
Rm	Amount of remittances sent by of the migrant in last 12 months
Rg	Geopolitical zones or region of the migrant
Ws	Work situation of the migrant before migration (employed/unemployed/full-time student)
μ	Error term
I	Cross-section unit of the migrant

Note: That remittance (rm) serves as a proxy of mean earning in the destination country as hypothesized in Borjas' model.
Source: Authors' Construction

4.3. Data and Estimation Techniques

This study adopted the 2009 Nigeria Migration Survey by World Bank, (2011). This dataset contains migration (internal and international) information collected from 3,328 respondents across the six geopolitical zones in the country. Disproportionate sampling approach was adopted in collecting in the information given the lopsided distribution of the migrants, with southern part of the country having excess concentration of migrant, especially international.

A discrete choice model is employed to estimate the determinants of international migration in Nigeria. Binary probit model is adopted in analysing the determinants of international migration. This model is so chosen given its peculiar econometric properties and assumptions as expounded by Greene, (2012), Cameron & Trivedi, (2005) and Wooldridge, (2004). From equation (7), probit equation can be specified below:

$$p_i = Pr[mg_i = 1|x_i] = \Phi(X_i\beta) \quad (7)$$

Where $\Phi(.)$ Is the cumulative distribution function for the standard normal, so that $p_i = \int_{-\infty}^{X_i\beta} (2\pi)^{-1/2} e^{z^{-2}/2} dz$. $mg_i = \{^{1;\, mg_i^* > 0}_{0;\, mg_i^* \leq 0}$; X_i is the vector for explanatory variables and β is the vector for parameters. To ensure consistent and reliable findings, linear probability or ordinary least squared model, though its properties break down in this case, is estimated as stated in equation (6).

5. Presentation and discussion of empirical results

Tables below contain the distribution of migrants and distribution of international migrants by destinations, age groups, education levels and geopolitical zones respectively. In table 5.1, it is shown that out of 3,315 migrants surveyed, 75.41 per cent (2,500) involved in internal (rural-urban and urban-rural) migration with 86.44 per cent of internal migrants engaging in rural-urban migration while the remaining 13.56 per cent partake in urban-rural migration. Of

the total migrants, 24.59 percent (815) participate in international migration and out of which, 70.92 percent go to OECD countries, 26.38 percent go to other African countries and 2.70 per cent migrate to other countries.

Table 4. *Distribution of Nigerian migrants (outflow)*

Group of Migrants	Frequency	Percent
Rural-Urban	2,161	65.19
Urban-Rural	339	10.23
OECD	578	17.44
Africa	215	6.49
Total	3,315	100

Source: Authors' Construction using World Bank's, (2011) Migration data

People participate more in internal migration than international one perhaps because there are more restrictions in cross-country movement than within a country. There are also more Nigerians migrating to OECD countries than other African countries may be because of the fact that the former has more socioeconomic opportunities than the latter.

Table 5 suggests that those within the age bracket of 35-64 years participate in international migration more than any other age bracket with about 33.04 percent.

Table 5. *Distribution of international migrants by age group*

Age Group	Frequency	Percent
7-24	112	12.77
25-34	415	28.5
35-64	264	33.04
64	10	16.67
Total	801	

Source: Authors' Construction using World Bank's, (2011) Migration data

This is because people at this age might have acquired sufficient education and/or skills required by the host country, followed by those with the age bracket of 25-34 with 28.50 per cent, then above 64 years with 16.67 per cent and finally, those with the age bracket of 7-24 years.

Table 6. *Distribution of international migrants by education level*

Education Level	Frequency	Percent
Primary or Less	64	9.95
Secondary and Technic	345	23.17
Tertiary Schools	386	37.55
Other	10	13.51
Total	805	100.00

Source: Authors' Construction using World Bank's, (2011) Migration data

It is demonstrated in table 6 that migrants with tertiary education engage in international emigration more than those with any other education. For instance, 37.55 per cent of those with tertiary education are international emigrants followed those with secondary or technical education with 23.17 per cent, then those with other type education with 13.51 per cent and lastly, those with primary education or less with 9.95 per cent. In the table 7 below, it is indicated that the zone with least international migrants is Northern Nigeria (1.97 per cent) while that with highest international migrants is South West (36.26 per cent including Lagos) followed by South East (23.78 per cent) and finally, South South (22.79 per cent).

Table 7. *Distribution of international migrants by geopolitical zones*

Region	Frequency	Percent
North	7	1.97
South East	175	23.78
South South	278	22.79
South West	186	36.26
Lagos	169	34.42
Total	815	100.00

Source: Authors' Construction using World Bank's, (2011) Migration data

Table 8 in the appendix contains the summary statistics of all variables in the model. Table 8 below presents the regression estimates of determinants of international emigration in Nigeria. The two models reveal consistent results in terms of both sign and significance with few exceptional cases. For instance, both the linear probability and binary probit models suggest that age, education years, household size, South-east, South-south, South-west, Lagos, urban and constant are statistically significant at 1 per cent while married and remittances are significant at 5 per cent. Again, student is significant at 5 per cent in LPM but at 10 per cent in binary probit model. However, male and employed are statistically significant in only LPM at 1 and 5 per cents respectively. The models also show that all the significant variables have positive signs except household size and married whose sign is negative. Only the significant variables in binary probit model would be interpreted since it is the most appropriate model in this case.

In the probit model, it is indicated that age and education years have positive effects on decision to migrate abroad. As age and education years advance, the probability to migrate abroad improves by 0.85% and 1.68% respectively. Being male leads to 5.05% more chances for an individual to migrate whereas being married causes 8.21% less likelihood to undertake international migration. An increase in the size of household brings about 1.13% less possibility for an individual to partake in international emigration while a rise in the amount of remittances triggers 0.005% more probability to involve in international emigration. Being from South-east and South-south, result in 63.50% and 52.70% more chances to participate in international emigration respectively than from North. Again, Being from South-west and Lagos state, instigate 67.70% and 54.20% increases in probability to engage in international emigration respectively than from North. Finally, being from urban areaand full-time student, cause 17.40% and 6.44% more likelihood to migrate abroad than from rural area and unemployed respectively.

Table 8. *Estimates from international migration model in Nigeria*

Variables	LPM	Binary Probit Model	
	Coefficient	Coefficient	Marginal Effects
Age	0.00639***	0.0241***	0.00849***
	(-0.0015)	(-0.0053)	(-0.0018)
Education years	0.0151***	0.0477***	0.0168***
	(-0.0031)	(-0.0119)	(-0.0041)
Household size	-0.00913***	-0.0322***	-0.0113***
	(-0.0016)	(-0.0059)	(-0.002)
Male	0.0752***	0.146	0.0505
	(-0.0277)	(-0.0916)	(-0.0308)
Married	-0.0630**	-0.231**	-0.0821**
	(-0.0278)	(-0.095)	(-0.0345)
Remittances	1.02e-07**	1.32e-06**	4.63e-07**
	(4.24e-08)	(5.71e-07)	(2.09e-07)
Southeast	0.271***	1.811***	0.635***
	(-0.041)	(-0.467)	(-0.123)
Southsouth	0.212***	1.565***	0.527***
	(-0.0371)	(-0.459)	(-0.129)
Southwest	0.331***	1.963***	0.671***
	(-0.0397)	(-0.442)	(-0.104)
Lagos	0.243***	1.499***	0.542***
	(-0.053)	(-0.452)	(-0.126)
Urban	0.155***	0.486***	0.174***
	(-0.0334)	(-0.113)	(-0.0397)
Employed	0.0645**	0.134	0.0474
	(-0.0282)	(-0.0955)	(-0.0335)
Student	0.0630**	0.179*	0.0644*
	(-0.032)	(-0.105)	(-0.0381)
Constant	-0.342***	-3.624***	
	(-0.0669)	(-0.543)	
Observations	1,345	1,345	1,345
R-squared (Pseudo)	0.17	0.194	0.194
Prob> chi2(F-statistics)	0.000	0.000	

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

It is quite obvious from the findings of LPM and binary probit model that, though remittances, individual and household characteristics play a vital role in determining international emigration in Nigeria, but geopolitical zones and locality are the major determinants.

Table 9. *International migration model in Nigeria with age- and education-cohorts*

Variables	Linear Probability Model:	Binary Probit Model:	
	Coefficients	Coefficients	Marginal Effects
Education-Cohorts			
Secondary/tech	0.0530*	0.459***	0.152***
	(-0.0307)	(-0.169)	(-0.0571)
Tertiary	0.0405	0.393**	0.126**
	(-0.0338)	(-0.173)	(-0.055)
Other education	0.0602	0.263h	0.0906
	(-0.0666)	(-0.416)	(-0.153)
Age-Cohorts			
7-24	-0.105***	-0.506***	-0.139***
	(-0.0406)	(-0.174)	(-0.0399)
25-34	-0.0711***	-0.246**	-0.0790**
	(-0.0266)	(-0.0987)	(-0.0319)
64+	-0.0359	-0.0624	-0.0196
	(-0.134)	(-0.403)	(-0.124)
Household size	-0.00815***	-0.0327***	-0.0105***
	(-0.0015)	(-0.006)	(-0.0019)
Male	0.0338	0.127	0.04
	(-0.0259)	(-0.094)	(-0.029)
Married	-0.0527**	-0.210**	-0.0682**
	(-0.0265)	(-0.0989)	(-0.0326)
Remittance (log)	0.115***	0.443***	0.142***
	(-0.0072)	(-0.0379)	(-0.0114)
Southeast	0.179***	1.450***	0.519***
	(-0.0407)	(-0.39)	(-0.127)
South-south	0.0561	0.954**	0.310***
	(-0.0369)	(-0.378)	(-0.117)
South-west	0.222***	1.494***	0.536***
	(-0.0402)	(-0.37)	(-0.119)
Lagos	0.123**	1.119***	0.417***
	(-0.0517)	(-0.387)	(-0.14)
Urban	0.0687**	0.286**	0.0932**
	(-0.0312)	(-0.113)	(-0.0372)
Employed	0.0172	0.0751	0.0241
	(-0.0265)	(-0.0965)	(-0.0311)
Student	0.0653**	0.204*	0.0675*
	(-0.0296)	(-0.113)	(-0.0388)
Constant	-0.940***	-6.420***	
	(-0.0877)	(-0.591)	
Observations	1,390	1,390	1,390
R-squared	0.269	0.2689	
Prob> chi2	0.000	0.000	

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Hence, international emigration in Nigeria could be seen as more of geographic-related problem due to opportunities offered in such areas.

When education and age are disaggregated and included in the international migration model in table 9, different results in terms of size have been arrived at. The binary probit model in table 9 reflects that secondary or technical and tertiary education, have more impacts on the likelihood to migrate abroad than primary education. That is, having secondary or technical and tertiary education, result in 15.20% and 12.60% higher chances to migrate abroad than having just primary or less education respectively. Falling within the age brackets of 7-24 and 25-34 years lead to 13.90% and 7.90% less probability to migrate abroad than falling in age bracket 35-64 years respectively. This means that those with secondary or technical and tertiary education and who fall within the age bracket 35-64 years are the ones that mostly engage in international migration in Nigeria. The remaining variables which are significant in table 8 maintain their significance and relative roles in

table 9 while remittance, when logged, assumes greater effect of 14.2%.

Table 10 contains the estimates from OECD and African migration models showing the determinants of emigration OECD and other African countries from Nigeria. OECD-Probit Model suggests that people with secondary or technical, tertiary and other type of education will be have more tendency to migrate to OECD countries than those with primary or less education. This is so given the marginal effects of those people with secondary or technical, tertiary and other type of education, hovering around 21.80%, 20.20% and 32.20% respectively. Falling within the age brackets of 7-24 and 25-34 years lead to 13.40% and 6.76% less probability to migrate to OECD countries than falling in age bracket 35-64 years respectively. Being from either of South-east, South-south, South-west or Lagos state, causes 34.90%, 23.70%, 38.50% or 21.20%more chances to migrate to OECD countries than respectively than from North. An increase in the size of household brings about 0.54% less possibility for an individual to migrate to OECD countries while a rise in the amount of remittances triggers 10.80% more probability to emigrate OECD countries. Being from urban areaand full-time student causes 8.91% and 9.96% more likelihood to migrate to OECD countries than from rural area and unemployed respectively.

Africa-Probit model shows that people with secondary or technical, tertiary and primary/less education will be more probable to migrate to other African countries than those with other type of education. This is so because the marginal effects of those people with secondary or technical, tertiary and primary/less education, stand around 99.0%, 83.10% and 92.20% respectively.

Falling within the age brackets of 7-24 years lead to 24.0% less probability to migrate to other African countries than falling in age bracket 35-64 years respectively. Being from either of South-east, South-south, South-west and Lagos state, causes 99.10%, 96.60%, 99.60% and 96.30%more chances to migrate to other African countries respectively than from North. A rise in the proportion of remittances triggers 3.48% less probability to emigrate other African countries while being male results in 6.85% higher tendency to emigrate other African countries.

Table 10. *International migration model in Nigeria with destination regions*

	OECD-Probit Model		Africa-Probit Model	
Variables	Coefficient	MarginalEffect	Coefficient	Marginal Effect
Education-Cohorts:				
Secondary/tech	0.773***	0.218***	4.708***	0.99
	(-0.207)	(-0.0608)	(-0.319)	(-21.84)
Tertiary	0.776***	0.202***	4.426***	0.831
	(-0.207)	(-0.053)	(-0.319)	(-136.3)
Other education	0.931**	0.322**		
	(-0.411)	(-0.162)		
Primary/less			5.455***	0.922
			(-0.421)	(-8.522)
Age-Cohorts				
age7-24	-0.686***	-0.134***	0.831***	0.240**
	(-0.197)	(-0.0272)	(-0.32)	(-0.0942)
age 25-34	-0.260***	-0.0676***	0.145	0.0294
	(-0.0998)	(-0.0262)	(-0.189)	(-0.0364)
age 64+	-0.206	-0.0484	0.392	0.0978
	(-0.402)	(-0.0845)	(-0.609)	(-0.176)
Household size	-0.0210***	-0.00543***	-0.0176	-0.00360*
	(-0.0062)	(-0.0016)	(-0.012)	(-0.0019)
Male	0.0233	0.00599	0.384*	0.0685***
	(-0.0962)	(-0.0247)	(-0.211)	(-0.0059)
Married	-0.069	-0.018	-0.144	-0.0298
	(-0.102)	(-0.0269)	(-0.186)	(-0.0363)
Remittance (log)	0.418***	0.108***	-0.171***	-0.0348
	-0.0392	-0.0096	-0.0613	-0.118
Southeast	1.091***	0.349***	4.892***	0.991
	-0.392	-0.135	-0.366	-9.539
South-south	0.877**	0.237**	4.339***	0.966***

	-0.375	-0.0997	-0.358	-0.0078
South-west	1.178***	0.385***	5.103***	0.996***
	-0.366	-0.127	-0.383	-0.0026
Lagos	0.662*	0.212	5.469***	0.963
	-0.386	-0.139	-0.447	-10.91
Urban	0.333***	0.0891***	-0.328	-0.0671**
	-0.115	-0.0314	-0.201	-0.0298
employed	-0.0347	-0.009	0.0822	0.0168
	-0.101	-0.0261	-0.18	-0.0361
student	0.355***	0.0996***	-0.843***	-0.133
	(-0.115)	(-0.0354)	(-0.266)	(-0.506)
Constant	-6.651***		-8.318***	
	(-0.598)		(-0.669)	
Observations	1,390	1,390	461	461

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Lastly, being either from urban areaor full-time student causes 6.71% or 13.30% less likelihood to migrate to other African countries than from rural area or unemployed respectively.

6. Conclusion and Policy Implications

This study has been an attempt to investigate the factors determining decision to migrate abroad from Nigeria in the light Borjas' (1991) and (1990) neoclassical model of international migration. The results suggest that mean earning (remittances) is a strong predictor of international migration in Nigeria, especially migrating to OECD countries. This is similar to the findings of Kim & Cohen, (2010) and Darkwah &Verter, (2014). It is also demonstrated that both individual and household characteristics are also good determinants of international migration in Nigeria. The individual factors, which are significant, include gender (if male), age, marital status and education years, while household size is the only significant under household characteristics. This is also in line with the findings of Parida & Madheswaran, (2011) and Gibson & McKenzie, (2009). Beside these factors, the study is an important revelation that international migration in Nigeria is geographic-related issue as southern part of country record far higher incidence of international migration than its Northern counterpart. This may not be unconnected with the access to waterways and other easier means of travelling abroad in the south. Also, urban residence is another geographic factor determining international migration in Nigeria. This result corroborates the findings of Kim & Cohen, (2010) and Sprenger, (2013).

Based on population distribution, it is found out that people within the age bracket of 34-64 years (who are mostly working population) are the most likely people to migrate abroad. Moreover, people with secondary or technical education are the most likely people to migrate abroad in the education group. This study also discover that Nigerians are more likely to migrate to other African countries than OECD ones given the larger size of marginal effects of determinants of migration to other African countries. Again, people do not migrate to other African countries for remittance purposes but they do migrate to OECD countries for remittances. It is reflected further that OECD countries are the destination of full-time students from Nigeria as they are less likely to migrate to other African countries. In terms of age groups, people aged 7-24 years are mostly the ones involved in migration to other African countries.

Thus, any meaningful international migration policy should target the afore-mentioned significant determinants of international migration. Similarly, the policy should be more focused on the southern part of the country where the incidence of international migration is higher. The determinants should serve as policy instruments, and people aged 35-64 years should be also the target population in the policy.

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