MIGRATION AND REMITTANCE: IMPLICATION FOR ECONOMIC DEVELOPMENT IN AFRICA

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ABSTRACT
The potential gain and loss of migration have been a recent issue of debate among academics and policymakers. Hence, this study examined the implication of remittance and migration in Africa. The study was based on the Neo-classical theory of migration and Harrod-two-gap and Domar's model. The study employed secondary data that span from 2000 to 2020 which was analyzed using the Random effect and generalized Method of Moment when the variables were found not to be cointegrated. The result revealed that remittance has a negative and substantial impact on economic development while migration had a positive and substantial impact on economic development. The economic development of African countries was also found to be a function of official development, population growth, and secondary school enrolment. It is therefore recommended that the management of migrant funds sent home must be handled with prudence. The creation of a favourable environment through political stability and security should be prioritized to attract more development aid and a favorable environment for investors to reap the benefits of increased migrant remittances in a globalized global economy.

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1. INTRODUCTION
Globalization is alleged of eroding traditional diversity and ushering mankind into a bland and homogeneous western marketed culture. The free movements of people across different nations of the world were based on the different bilateral and multilateral agreements signed by nations. According to Coulibaly (2015), international migration is alleged of snatching the finest kids from developing countries and integrating them into the globalized magma. This is particularly true when skilled labour is involved, and the "brain drain" or "human capital exodus" is frequently seen with ethical disapproval by those who remained (Coulibaly, 2015). In most situations, however, the choice to move is decided by the extended family, or the community, with a strategic perspective with high expectations given the significant amount of money spent in sending them out. This is wherein most cases migration can beget more future migration (the so-called chain or network effect) (Koczan, Peri, Pinat & Rozhkov 2021).
However, there has been a current interest in the issues of migration and remittance from policymakers and academics. This has been triggered by increasing flows of remittance

particularly, to the developing countries. According to Engler, Honjo, MacDonald, Piazza, and Sher (2020), the total number of migrants in the World was recorded to be 281million people in 2021 which is 3.6% of the global population (International Organization for Migration, 2022). Ratha, (2005) noted that remittance to developing countries increased from $31.1 billion in 1990 to $167 billion in 2005. This increased to $340 billion in 2010 and $539 billion in 2020 (World Bank, 2022). This has led to a reduction in the number of countries with income per capita of below $7, 000. However, Sub-Saharan African countries are exempted from this increase in the per capita income of individuals in the countries. One of the arguments for migration is that it is an effective instrument for the reduction of poverty thereby enhancing welfare and development through economic and social remittance, return migration, as well as Diasporas engagement (De Haas & Plug 2007). Data showed that in Nepal, the increase in remittances led to a significant reduction in the headcount poverty rate from 42% between 1995 and 1996 to 31% between 2003 and 2004 (World Bank 2006b).

The inflow of remittance to Africa is about ½ of the global private capital flows. This has increased from an average of $38.4 billion between 2005 and 2007 to $64.9 billion between 2014 and 2016, while the GDP per capita was at $2,008 in 2016 (United Nations Conference on Trade and Development (UNCTD), 2018). But countries in Africa that have low per capita income are still significantly high. Africa has the highest number of countries with low income per capita (Engler, et al, 2020). Although very few countries in Africa tend to benefit from remittances from migration, for instance in Morocco, remittances account for about 50% of the lowest income quintile's household budget thereby reducing the probability of being poor by 7% in Morocco and about 9% in Egypt (Bouoiyour & Miftah, 2014), yet, the level of poverty and income inequality is still high and development is still low in comparison to the total migrant out of the region and the amount of remittance inflow into the region. Hence, it has become imperative to ask what developmental impact is migration and remittance to African countries. Given the effect of the brain drain and Dutch disease syndrome of international migration, how significant has migration and remittance been to the development of countries in Africa and the region in general?

The economic implication of migration like the Dutch disease (Chowdhury & Rabbi 2014), the distributional effect of labour and income (Docquier, Ozden & Peri 2014; Noja, Cristea, Yüksel, Pânzaru & Drăcea, 2018), the remittance associated with international migration (Feeny, Iamsiraroj, & Mcgillivray, 2014; Majumder & Donghui, 2016) and the growth impact (Akanbi, 2017) have been major areas of debate in the literature. However, little has been done on the developmental implication, particularly for the sending developing countries. For instance, the brain drains implication of international migration on the sending developing countries was examined by Agrawal, Kapur, McHale & Oettl (2011), and Stolz and Baten (2012).

The empirical literature is also faced with contracting opinions and outcomes. Adams and Page (2003) showed in a study on 71 developing countries that a 10% increase in international remittance per capita led to a 3.5% fall in the number of people living in poverty. Other studies have shown that for many developing countries, migration and remittances reduce the poverty depth and severity, stimulate economic activities indirectly and support the development drive of the origin countries. On the other hand, other studies have shown that migration and remittance are harmful to development. It increases dependency, increases the moral hazard of risk (reducing the productivity of the receiver) as well as exacerbates inequality between the remittance recipient and non-recipient of remittance (Adams, 1991; Azam & Gubert, 2005; Chami, Fullenkamp & Jahjah, 2005)

Skeldon (2005) also noted that in South Africa, in 2003, about 1/5 of the public health sector positions were vacant as a result of the brain drain effect of migration. Furthermore, studies argue that remittances distort social development since they benefit mainly families with a member living abroad, resulting in gaps in family wealth and exacerbated societal inequality. UNCTD (2018) observed that irrespective of receiving relatively large amounts of remittances, sending countries often experienced a weaker effect of migration on structural transformation. This was assumed to be a result of the reduction in the revenue collected from tax, the loss of skilled labour, constraints relating to economic development, or even the regulatory obstacles in the form of costs of remittances among others.

However, while emphasis has concentrated on the growth impact of remittance, the developmental impact of net migration and remittance for Africa have not been considered. Should policy measures for achieving development include remittance? What is the comparative impact of remittance and official development assistance on the development of Africa? It is therefore pertinent for this study to fill this lacuna in the previous studies, particularly for Africa. Hence, the objective of the study is to determine the impact of migration and remittance on the development of Africa. It is expected that the outcome of this study will provide a better policy positioning for African countries toward achieving economic development.

2. LITERATURE REVIEW

2.1 Conceptual Literature

Migration encompasses individuals who migrate for various causes across diverse locations; it is a challenging term to define. However, migration can generally be defined as the temporary or permanent change of place of residence by individuals (Lee, 1966 in Noja, Cristea, Yüksel, Pânzaru, & Drăcea, 2018). Or it can be defined as the willful movement of people from one place to the other. Migration can be internal or international. When the movement is with a country it is called internal but when the movement is crossing a national border, it is international. This study is concerned with international migration. A migrant can be a person who relocates inside a country; a refugee crossing international borders to avoid religious or political persecution; a job seeker who moves to another country in search of better economic opportunities; a forced slave; or someone displaced by war or natural disaster. Demographers, according to Adams and Paige (2003), do not have a clear functional definition of migration, as it occurs in different contexts. The reasons for immigration are linked to the circumstances in which they occur. First, physical issues such as the global economy influence the makeup of migratory streams. Second, societal differences (gender, class, caste, and so on) have significant consequences on individual movement.

Migrant remittances are when immigrants send or return home with a portion of their income in cash or food to help their families. They have grown rapidly in recent years, and many developing countries are now relying on them as their main source of foreign exchange. Because many remittances are sent without authorization, it is difficult to determine the exact amount. International remittances to migrants are expected to exceed $ 596 billion in 2017, with $ 450 billion being delivered to developed countries. Remittances are important and are also distributed among developing countries in the form of capital flows (foreign direct investment). Remittances account for about 4% of the GDP of Low-income countries in comparison to 1.5% of the GDP of middle-income countries (Adams & Page, 2003).

2.2 Theoretical Literature

There are various theories of migration as it relates to labour and remittance; the optimistic and the pessimistic, the two-gap model, and the endogenous theoretical model among many others. But in all, migration is a result of two forces; the push, and pull forces.

The optimistic Theory: two major supporters of this theory are Todaro (1969) and Beijer (1979) in De Haas (2010). According to this theory, returning immigrants are important agents of change and creativity in the development theory of the 1950s and 1960s. They believe that immigrants are expected to bring back not only money but also new ideas, information, and business sentiment, which play important roles in the growth and development of their origin countries. (De Haas, 2010). Hence, remittances are seen as important for the growth and development of origin countries as they change the level of income of the family as well as boost investment and innovation (De Haas, 2007).

Neo-classical Theory: this is the oldest international migration theory. It posits the economic development impact of labour migration (Wickramasinghe & Wimalaratana, 2016). The theory believes that the geographical differences between the demand and supply of labour are the cause of international migration. Elastic labour tends to move from places of low wage to places of a higher wage. This is highly encouraged by the remittance received by the labour-supplying countries and the incentive of fostering production. The theory concludes that migration provided the avenue for closing the wage differential gap. it is further assumed international migration of both sending and receiving countries is regulated by the labour market rules and controls could (Massey, Durand, & Malone, 2005).

The Dual Labour Market Theory: this theory assumes some implications contrary to the macro models, and is not in total disagreement with the Neo-classical Economics. The Dual labour market theory believes that international migration is demand-driven. According to the theory migrant workers' demand is a result of the form of the economy's needs of the economy, and not just of wage differences. The wishes of households or families also count.

Migration System Theory: this is based on the assumption that migration adds to the changing of the different aspects of the receiving and sending country. As observed by De Haas (2010a), this is intimately related to the Network Theory. The System approach is concerned with the macroeconomy (dominance, political systems, national policies of immigration, and cultural and social systems) and micro (kinship and friendship) linkages of places linked to the migration process (Kritz, Lim, & Zlotnik, 1992 in Wickramasinghe & Wimalaratana, 2016). Thus, it emphasizes migration and development linkage (economic and social) (De Haas, 2010a). Hence, it could be argued that migration can influence the socio-economic development of the country of origin and encourage subsequent migration both at macro and micro levels.

2.3 Empirical Literature

In the 1970s and 1988, there have been a tragic perception that migration and remittances were caused by a lack of development in the migrants' origin (Olufemi & Ayandibu, 2014). Scholars, authorities, and governments have recently become interested in migration and remittances from emerging nations. As interest in and study of the ever-increasing streams of remittances to poor nations grew, experts were forced to express different perspectives on the implications for economic progress and development. As they increase the purchasing power of households, remittances are seen as an incentive to boost economic growth and development. They give additional working cash to recipients' private home businesses. The impact of remittances on growth is divided into three categories (increasing the amount of capital accumulated, changing labour growth, and affecting

investment efficiency by affecting TFP growth) (Barajas, Chami, Connel, Gapen & Montel, 2009).

Remittances, according to Combes and Ebeke (2011) significantly reduce utility instability, with a significant impact on developed countries. They used panel data from seven West African countries from 2004 to 2018 to study the cumulative remittance effect on economic growth on the traditional neoclassical growth chart. Remittances were revealed to positively impact economic growth, providing another way to invest and help manage money.

Rao and Hassan (2011) used a group of interaction methods to analyze the direct impact of remittances on growth, as well as how remittances affect the growth of an unbalanced panel in 40 countries. It was discovered that while remittances have had short- to medium-term transitory growth effects, there are no long-term growth results. In the study by Selvanathan, Siddique, and Selvanathan (2012), there was no causal link between remittance growth and economic growth in Sri Lanka, however, bilateral relations have been demonstrated, i.e. economic growth stimulates remittance growth and vice versa. The results of Lartey (2013) on the other hand found a positive relationship between remittances and growth, as well as a positive impact on remittances and economic growth depth.

Exploring the migrant remittances and economic growth relationship using data from Nigeria, Ghana, and South Africa, in Sub Saharan Africa (SSA), Kanu and Ozurumba (2013) showed that remittances positively impact the economies of these countries. South Africa has been identified as the most influential country, followed by Ghana and Nigeria. Following the study of Kanu and Ozurumba (2013), Marwan, Kadir, Hussein, Zaini, Rashid, and Helmi (2013) employed Johansen's integration technology to explore the relationship between exports, aid, remittances, and growth through a series of Sudanese studies. They found that there was a long-standing positive link between growth, exports, and remittances.

Majumder and Donghui (2016) using the Bounds testing technique, investigated the influence of trade, remittances, and money supply on Bangladesh's economic development. According to the Bounds test, remittances have a good and far-reaching relationship with Bangladesh's economic growth.

The remittances' impact on the economic growth of small developing islands (SIDS) has also been studied by Feeny, Iamsiraroj, and Mcgillivray, (2014). Although there is no link between remittances and growth in developing countries, it was suggested that there is a positive correlation between both factors in SIDS. SIDS in SSA and the Pacific are affected, but the ones in Latin America and the Caribbean are not. Although the majority of research support remittances' beneficial impact on developing nations, detractors say that remittances' growth benefits are either negative or nil.

Akanbi (2017) explored the economic growth and human development impact of migration in 19 selected sub-Saharan African countries over the period 1990 to 2013. The study made use of the two stages-least square methods of estimation in a linear model. Migration was measured by the stock of international migrants and the ratio of personal remittances received to personal remittances paid. the outcome of the study revealed in conformation to literature that human development is a function of income inequality, poverty, financial inclusion, and social expenditure. Migration was found to have a significant but negative impact on the explanation of human capital development and economic growth in the region. Specifically, an increase in migration deteriorates the level of human capital development and economic growth of SSA.

Noja, Cristea, Yüksel, Pânzaru, and Drăcea (2018) examined the channels by which migrants can contribute to the sustainable development of the host countries. A balanced

panel model was employed on ten European host countries over the periods 2000–2015 and 2000–2019. The study employed several models (fixed effect, spatial; analysis, and the dynamic GMM among others). The result of the study showed that the inflows of immigration have affected the outcomes in the labour market of the host countries. There were positive impacts on gross domestic product per capita and levels of employment. The educational level of the migrants is an important factor in their level of integration.

Olayungbo and Quadri (2019) explored remittance, financial development, and economic growth using selected countries in Sub-Saharan Africa for the period 2000 to 2015. The Pooled Mean Group and the ARDL were employed in estimating the data. The upshot revealed a short-run and a long-run relationship between remittance and financial development. Financial development was found to be used as a substitute for remittance. GDP was also revealed to granger cause remittance.

Asogwa, Anumudu, Ogbuakanne, and Ugwuanyi (2019) explored the role of education in the amount of inflow of remittance and prosperity from migration in Nigeria. This is aimed at determining the odds ratio of sending money to households in Nigeria. The study made use of the decomposition of Gini coefficient, and the regression-based on logistics. The outcome revealed that educational level before migration affects the degree of unequal remittance among the migrants. Hence, advancing human capital development through education before migration will reduce the inequality gap in the inflow of remittance.

Sanderson and Kentor (2020) investigated the nexus between migration and development in America. They examined the relationship between migration and wage differentials in annual data spanning from 1970 to 2010. Positive feedback was found between international migration and cross-national inequalities. Migration was found to strongly respond to wage differentials which were found to be stronger for contiguous countries. Also, wage gaps were found to respond to migration leading to an increase in per capita income differences. The study thus concluded that the nexus between migration and development is a function of strong internal momentum.

2.4 Research gap and value contribution

The reviews of previous research have shown that there is a current increase in international migration. The forces driving international migration also have been explored. The emphasis from the previous study has been on remittance from migration. Remittance has been found to significantly enhance economic growth through the provision of savings, investment channels, and the transfer of technology in the case of return migration, (Kanu & Ozurumba, 2013; Majumder & Donghui, 2016; Akanbi, 2017). However, very few studies have looked at the developmental impact of migration. Migration provides a double edge sword to most developing sending countries. It increased the investment and income inflow, but on the other hand, snatches the finest kids through the brain drain channel. Growth does not translate to development. Hence, given the quest for development, a review of the previous literature showed that there is a paucity of empirical research to prove the developmental justification of international migration for the developing countries in general and Africa in particular. It has therefore become imperative for us to investigate the tradeoff between remittance from migration and the loss of labour and good brains. This is the cruse of this study to close this lacuna.

3. METHODOLOGY

3.1 Theoretical framework

This study is hitched on the Neo-classical Theory and the Harrod-two-gap Domar's model. The Neo-classical Theory concludes that migration provides the avenue for closing the wage differential gap. The core thesis of Harrod-two-gap Domar's model is that most

emerging economies are either short on domestic savings to catch up with investment opportunities or short on means to finance capital and import intermediate goods (Todaro & Smith, 2012). External financing can perform a vital function in replenishing domestic resources for the sake of easing savings or foreign exchange constraints, according to a two-gap study of foreign aid.

This research uses the Harrod-Domar growth model's saving-investment theoretical gap paradigm, as popularized by Chenery and Strout (1966). It assumes that developing nations may reach equilibrium in their saving-investment imbalance by utilizing external inflows of capital, including remittances. Using the two-gap approach, we can see that at all times, saving equals investment:

$S_t + I_t$ ……(1)

But, in real life, real saving is often less than investment in African countries (saving gap); hence, remittances can perform as external funds that be used to add up to the low level of saving, thus investment is given as:

$S_t + remitt = I_t$ (2)

The stock of capital stock equation with capital stock being a function of saving is thus given as:

$Kt = St + remitt + (1-\delta)K_{t-1}$ (3)

Applying the Cobb- Douglas production function, we have:

$Y_t = AL_t^{1-\alpha}K_t^{\alpha}$ (4)

Where Yt = the gross domestic product (GDP);
Lt = labour
Kt = the capital stock.

3.2 Model Specifications

This study uses the modification of Olayungbo and Quadri (2019) function model which is stated thus:

$RGDPpc_{it} = \beta_0 + \beta_1 REMITpc_{it} + \beta_2 ODA_{it} + \beta_3 PGR_{it} + \beta_4 EDU_{it} + \beta_5 NMGT_{it} + \beta_6 TOP_{it} + \varepsilon i,t$

Where:
RGDPpc = Real Gross Domestic Product per Capita
REMITpc = Remittance per capita
ODA = Official Development Assistance.
PGR= Population growth rate
EDU = Enrollment in secondary education as a percentage, a variable representing the level of human capital
NMGT= Net Migration.
TOP = Trade Openness.

3.3 Method of Data Analysis

The properties and the statistical validity of the variables were tested before the empirical estimation. Thus, the variables were subjected to a multicollinearity test, unit root test, and cointegration test. The common methods of estimating international migration models are the Ordinary Least Squares (OLS), fixed/Random effect model, the PMG/ARDL (to determine the long-run and short-run relationship), First-Difference (FD), or the Instrumental Variables (IV). However, to avoid the weaknesses, and to control for endogenous explanatory variables and heterogeneity, especially in the panel framework, the Generalized Methods of Moments (GMM) estimations have proven to be better. However, to provide room for not making policy on a biased result, various methods (fixed/Random effect model and the Generalized Method of Moment (GMM)) were used

and the estimation with the best outcome was used for policy recommendation of the study.

3.4 Data Sources

The data for the study was obtained from the World Trade Organization (2020) and World Bank database (2021) for 10 countries in Africa: Algeria, Angola, Cameroon, Ghana, Kenya, Morocco, Mozambique, Nigeria, Zambia, and Zimbabwe. Two countries each were selected from each of the sub-regions in Africa which include: Northern, Eastern, Central, Southern, and Western African countries. The selection of the countries was rooted in the availability of data. The study covers the period 2000–2020 given the limitation of data.

4 RESULTS AND DISCUSSION OF FINDINGS

4.1 Descriptive Analysis

Table 4.1: Descriptive Analysis

Statistics	RGDPPC	REMITPC	ODA	PGR	EDU	NMGT	TOP
Mean	2813.897	2.535983	1.08E+09	2.345662	26.73771	-29062.99	66.34820
Median	1664.666	0.924427	8.14E+08	2.597109	25.36660	0.000000	64.57357
Maximum	22942.61	13.61145	1.14E+10	3.710555	99.61435	357301.0	152.5471
Minimum	258.4710	0.000000	0.000000	0.233334	0.000000	-697817.0	0.000000
Std. Dev.	3938.867	3.109392	1.13E+09	0.757398	27.47339	121896.8	23.14588
Skewness	3.308210	1.369590	4.422679	-0.710562	0.554578	-3.326130	0.665938
Kurtosis	14.55429	4.007331	37.16624	2.966546	2.131329	17.17009	4.193827
Jarque-Bera	1551.188	74.53096	10898.76	17.68123	17.36715	2144.135	27.99227
Probability	0.000000	0.000000	0.000000	0.000145	0.000169	0.000000	0.000001
Sum	590918.3	532.5564	2.27E+11	492.5891	5614.919	-6103227.	13933.12
Sum Sq. Dev.	3.24E+09	2020.679	2.66E+20	119.8932	157750.5	3.11E+12	111968.0
Observations	210	210	210	210	210	210	210

Source: Authors' Compilation using Eviews

As presented in Table 4.1 the variables showed the presences of being normally distributed as their means and medians are within the values of the maximum and minimum. The output showed that Real Gross Domestic Product Per Capita (RGDPpc), Remittance per capita (REMITpc), Official Development Assistance (ODA), Enrollment in secondary education (EDU), and Trade Openness (TOP) were positively skewed while Population growth rate (PGR) and Net Migration (NMGT) were skewed negatively. The variables were platykurtic from the kurtosis indicating the flat shape of the distribution relative to normal distribution while RGDPpc, ODA, and NMGT were leptokurtic, suggesting that the distribution was peaked relative to normal distribution. Finally, the Jarque-Bera statistic rejected the null hypothesis of not normally distributed for all the variables at a five percent critical value, this means that all the variables are normally distributed.

4.2 Correlation test

The multicollinearity tests carried out to determine the degree of correlation among the variables are presented in Table 4.2.

Table 4.2. Correlation Analysis Matrix

	RGDPPC	REMITPC	ODA	PGR	EDU	NMGT	TOP
RGDPPC	1.00000						
REMITPC	-0.14701	1.00000					
ODA	-0.10571	0.25726	1.00000				
PGR	0.11809	-0.45692	0.12104	1.00000			
EDU	0.13553	0.19208	-0.01619	-0.31462	1.00000		
NMGT	0.05511	-0.23202	-0.00898	0.32274	-0.12081	1.00000	

TOP	-0.222098	-0.13017	-0.19139	0.05612	-0.00053	0.07596	1.00000

Source: Authors' Compilation using Eviews

Using the correlation coefficient benchmark of 0.95 as recommend by Iyoha (2004), it was revealed that there is no multicollinearity among the variables as their correlation coefficient are below 0.95. It was also revealed from the result that Real GDP per capital and PGR, EDU and NMGT are positive related while the relationship between real GDP per capita and REMITpc, ODA and TOP are negative.

Table 4.3 Unit root test results

Variables	ADF		PP		IPS		LLC		
	Level	1st Diff	Level	1st Diff	Level	1st Diff	Level	1st Diff	Order of integration
RGDPpc (Prob.)	13.1078 (0.8727)	75.7237 (0.0000)	14.9319 (0.7803)	77.0414 (0.0000)	0.76218 (0.7770)	-6.42636 (0.000)	-0.88481 (0.1881)	-7.60339 (0.000)	1(1)
REMITpc (Prob.)	42.0751 (0.0027)		42.6404 (0.0023)		-2.62050 (0.0044)		-1.85297 (0.0319)		1(0)
ODA (Prob.)	26.7513 (0.1424)	58.6447 (0.0000)	25.7431 (0.1745)	127.888 (0.0000)	-1.11236 (0.1330)	-4.63219 (0.0100)	0.18309 (0.7919)	-7.71932 (0.000)	1(1)
PGR (Prob.)	6.28632 (0.9985)	51.7093 (0.0001)	2.72938 (1.0000)	36.4063 0.0138	4.42322 (1.0000)	-3.69158 (0.0001)	3.07710 (0.9990)	-4.39410 (0.0000)	1(1)
EDU (Prob.)	27.0658 (0.0778)	160.491 (0.000)	25.7950 (0.1045)	128.299 (0.0000)	-1.57538 (0.0576)	-12.6027 (0.0000)	-0.41968 (0.3374)	-10.8807 (0.0000)	1(1)
NMGT (Prob.)	143.479 (0.000)		145.612 (0.0000)		-11.9482 (0.0000)		-9.49166 (0.0000)		1(0)
TOP (Prob.)	22.7086 (0.3033)	115.254 (0.0000)	22.2163 (0.3289)	117.075 (0.0000)	-0.39676 (0.3458)	-9.47290 (0.0000)	0.10411 (0.5415)	-6.96916 (0.0000)	1(1)

Source: Authors' Compilation using Eviews

The properties of the variables were tested to determine the presence of unit root. Levin, Lin, and Chu (2002) (LLC), Im, Pesaran, and Shin (2003) (IPS), Augmented Dickey-Fuller (ADF, 1979) and Phillip-Perron (PP, 1988) tests were carried out. Remittance per capita and Net migration were stationary at levels, I(0) from the different tests employed. Real GDP per capita, Official Development Assistance population growth rate, Enrollment in secondary education, and trade openness on the other hand follow the I(1) process. Given the mixed levels of stationarities, the use of the PMG/ARDL model is most appropriate for cointegration.

4.4 Cointegration test result

Table 4.4. Extracted Perdoni cointegration test result

	Statistic	Prob.
Panel v-Statistic	-1.809564	0.9648
Panel rho-Statistic	2.020746	0.9783
Panel PP-Statistic	1.127464	0.8702
Panel ADF-Statistic	4.119775	1.0000
Group rho-Statistic	2.673182	0.9962
Group PP-Statistic	-0.185324	0.4265
Group ADF-Statistic	1.561510	0.9408

Source: Authors' Compilation using Eviews

Judging from the results presented in table 4.4, it was found that of the seven 7 tests presented, the probability of all the tests is greater than 0.5%. Hence, we do not fail to accept the null hypothesis of the absence of cointegration among the variables.

4.5 Panel estimation

Given the outcome of the cointegration result suggesting no long-run relationship among the variable, the model was thus estimated by first using the fixed effect and random method.

Table 4.5: Panel Models

Predictors	LRGPDpc: FEM (1)	LRGDPpc: REM (1)
(Intercept)	-3.230 (0.0253)*	-2.633 (0.0688)
LREMITpc	0.106 (0.0253)*	0.078 (0.0879)
LODA	0.193 (0.0125)*	0.203 (0.0072)*
LEDU	1.042 (0.0000)*	1.059 (0.0000)*
PGR	1.522 (0.0005)*	1.147 (0.0012)*
NMGT	-1.970 (0.5509)	-1.855 (0.5746)
TOP	-0.011 (0.0001)*	-0.011 (0.0002)*
Total panel (unbalanced) observations	113	113
R-squared	0.897526	0.566468
Adjusted R-squared	0.882887	0.541929
Durbin-Watson stat	0.557412	0.447933

*FEM: Fixed effect model, REM: Random Effect model. (1): One-way, * p<0.05 ** p<0.01 *** p<0.001.*

The probabilities are in bracket respectively.

Source: Author computation

Table .4.6: Hausman Test

Model	Chi-Sq. Statistic	p-value
FEM(1), REM(1)	8.491415	0.2043

FEM: Fixed effect model, REM: Random Effect model
** p<0.05 ** p<0.01 *** p<0.001.*

Source: Author computation

To determine a more efficient and consistent (preferable) in the use of fixed effect to random effect, the Hausman test was employed. This was based on the null hypothesis of efficient and consistent REM to the alternative hypothesis of inefficient and inconsistent REM. From the result in Table 4, we fail to reject the null hypothesis for the one-way fixed-effect model against the one-way random effect model since the p-value is larger than 0.05. The result of the REM estimation showed that with each unit increase in official development aid (ODA), population growth (PGR), and secondary school enrollment

(EDU), RGDPPC rises. This positive link is statistically significant, at a 5% significance level. Trade openness (TOP) had a negative but significant impact on economic development measured by RGDPpc while Remittances per capita (REMITpc) had a positive and insignificant impact on economic development measured by RGDPpc. Net migration (NMGT), on the other hand, was found to have an inverse and insignificant impact on the RGDPPC. However, given the poor performance of the result which can be attributed to challenges of endogeneity, cross-section dependency, and heteroscedasticity that are common in panel models, the GMM estimation method was employed. The GMM has the advantage over the fixed effect and random effect models in the corrections of cross-sectional dependency and Heteroscedasticity (Sarafidis, 2008; Noja, et al, 2018).

Table 1.7: GMM estimation result

Dependent Variable: LRGDPPC
Method: Panel Generalized Method of Moments
(First Differences Transformation; White period instrument weighting matrix)

Variable	Coefficient	t-Statistic	Prob.
REMITPC	0.014622	1.121940	0.2633
LODA	0.013656	2.348317	0.0199
EDU	0.000265	0.792051	0.4293
PGR	0.646050	2.790500	0.0058
NMGT	5.51E-08	5.307592	0.0000
TOP	-0.003788	-2.624339	0.0094
Mean dependent var	0.055982		
S.E. of regression	0.173357		
J-statistic	1.941584		
Prob(J-statistic)	0.163497		
S.D. dependent var	0.174635		
Sum squared resid	5.830222		
Instrument rank	7		

Source: Authors' compilation from E-views extraction

Interpretation of result

The use of the outcome of the GMM estimation is based on the validity of the instruments used for the study. This was determined by employing the Hansen/J statistics. This is based on the null hypothesis that the instrument is valid against the alternative. The outcome of the J-statistics as presented in table 5 and the probability avails us the opportunity to accept the null hypothesis of a valid instrument. Examining the relationship and impact of migration and remittance on the level of development, the result revealed that in line with our expectation, there is a positive relationship between REMITpc and economic development. Specifically, a 1% increase in remittance leads to about a 2% increase in development. This however does not have any significance. This finding is in line with the findings of Kanu and Ozurumba (2013) who showed in a study on Nigeria, Ghana, and South Africa, that remittances positively impact these economies. Also, Majumder and Donghui (2016) on Bangladesh found an impact of remittance on Bangladesh's economic development. But the finding of this study is in disagreement with Feeny, et. al, (2014) who found that for developing countries, there is no link between remittance and economic growth. The pull factors (better wage offers) from the developed countries have been found as the major factor of migration and this was found to enhance their labour market and

productivity, especially for the economic/certificated migrants. Although it is expected that remittance will be positively related to development, Adams, (1991) has shown that remittance tends to increase the inequality gap, and inequality has been found to be negatively related to development.

A further outcome of the study showed that Official Development Assistance (ODA), population growth rate (PGR), and enrollment in secondary education (EDU) are positively related. While ODA and PGR were found to be statistically significant drivers of economic development in Africa, EDU was found not to have a significant impact on economic development. Net migration (NMGT) was revealed to have a positive and statistically significant impact on economic development in Africa. The result showed that a 1% increase in ODA, EDU, PGR, and NMGT leads to a 0.014%, 0.0003%, 0.65%, and 0.000551% increase in the economic development of Africa respectively.

The outcome of the impact of NMGT is in support of the Migration System theory. This is however in variance with the study of Akanbi (2017) who found a negative significant impact of migration on human capital development and economic growth in a sample of selected SSA countries. The significant outcome of ODA and NMGT are in line with expectations while contrary to our expectations, PGR was found to have a positive relationship while EDU was found to have an insignificant impact on economic development. It can thus be argued that the effective use of population will increase the development of the country through the increase in the productivity of labour (Adewole, (2012). However, Ogbeide-Osaretin & Orehwereh, (2020), found a contrary result. This may also be attributed to the different measures of economic development. The insignificant impact of education as a measure of human capital development may be attributed to the several challenges that the educational system in Nigeria is facing. This has resulted in poor output with a low level of productivity.

TOP was found to be negatively but significantly related to economic development in Africa. The outcome of TOP conforms with the findings of Metu and Chinedua's (2015) hypothesis that trade openness does not contribute much to the increase in the economic growth of poor nations. This conclusion contradicts previous empirical research such as Adjei, Bo, Nketiah, Adu-Gyamfi, & Obuobi, (2020), which claim that trade openness is associated with economic development. Africa and most developing countries have been found to only play the role of the supply of primary products in the international market; this has often affected their terms of trade. However, our findings show that the impact of official development assistance, population growth rate and secondary school enrollment variables have a positive coefficient and are significant, implying a large, and positive, relationship with long-term economic development in Africa.

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5. CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Policy implications and recommendation.

This study explored the impact of migration and remittance on economic development in Africa. Ten selected countries in Africa over the period 2000 to 2020 were used on various panel estimating techniques. However, the result of the GMM proved to be better than others. Hence the policy implication of this study was drawn from the upshot of the result. Following the result of the GMM estimation, the following policy coronaries were made.

1. The study revealed that remittance exhibited a positive and insignificant impact on economic development. As noted by Adams (1991), international remittance tends to widen the inequality gap and encourage dependency on developing countries which deterred productivity. However, given that it is positively related to Africa's economic development, it implies that remittance has the capacity of enhancing economic development. Hence, this study advocates that remittance inflow should be properly

managed, and channeled by both individuals and the government to productive activities. There is also the need to ensue economic stability and sustainable production policy, as well as political stability, thereby, driving economic and social development.

2. The result of the impact of remittance on economic development was strengthened by the outcome of net migration which had a positive and substantial impact on development. This result implies that the argument for the brain-drain effect of migration does not really hold in Africa.

3. It was also revealed that official development assistance showed an appreciative significant impact on development. The study, therefore, advocates for the creation of enabling environment that attracts more of the ODA. Thus, policies such as internal security within the country should be put in place.

4. Education was revealed to have an unsubstantial approving impact on economic development. Human capital development has been proven to be a key to economic development. Increasing education standards and availability will also increase the productivity of the emigrants in any country where they go. This will therefore have a feedback effect on the origin country in the form of an increase in remittance as well as technology as they will be more gainfully employed. This study hence supports other studies and recommends the increase in the availability of quality education in African countries.

5. Population growth was also established to have an appreciative substantial point on economic development. It implies that although most African countries are having high population growth, this population if channeled to productive use will remote economic development. Therefore, we advocate for the effective use of the population through an increase in labour force participation and productivity of labour through quality education.

5.2. Conclusion

For many decades, the complexity of migration has continued to be an issue of concern. While migration has been found to profit the origin countries through the remittance of income, it has also been found that remittance has led to the loss of labour force. This current study has found that Remittances, had a negative but substantial impact on development while net migration had a positive substantial impact on economic development in African countries. Furthermore, our findings suggest that official development aid substantially influences African development. The study hence advocated for the productive use of remittance and increasing the access and quality of education.

Contribution/ Originality

This paper has contributed to the literature by drawing attention away from the remittance from international migration on economic growth and its impact on economic development. It also further examined the effect of net migration on the economy with the aim of investigating the impact of the loss of labour from migration on economic development in Africa

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