

Human Capital Flight, Remittances and the Problem of Achieving Sustainable Economic Growth in Africa

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Abstract:- The research employed data from twenty African countries namely: Nigeria, Ghana, Benin, Senegal, Niger, Cote d'Ivoire, Gambia, Rwanda, Tanzania, Sudan, Kenya, Ethiopia, Tunisia, Morocco, Egypt, Algeria, Zambia, South Africa, Namibia and Mozambique; and with variables such as real GDP, stock of physical capital, labour force, remittances received, per capita income, human capital flight-proxied by net migration, education-proxied by secondary school enrolment and technology- proxy by total factor productivity. The data were collected for the range of 40 years (1977-2016). The result shows that remittances, per capital income, labour force, stock of physical capital, education and total technology exert positive relationship with economic growth, while human capital flight shows non-significant relationship with economic growth. We therefore recommend proper channeling of remittances in productive activities, as remittances can serve as compensation for human capital flight.

Key world: Remittances, Human capital flight and economic growth

I. INTRODUCTION

The problem of human capital flight has reached quite disturbing proportion in LDC's with African countries in exceptional and this tends to be more detrimental in the LDC's because of weak institutional framework (Lalla; 2012). Though some research in the middle-income countries proved that brain drain generates higher income which helps in ameliorating poverty, improves health, educational outcomes, as well as promoting the economic development of those regions (Schiff and Ozden, 2007; Görlich and Trebesch, 2008; Sherr et. al., 2012; Adela and Dietmar; 2016).

Riccardo (2006) in their analysis strongly disagreed with the 'augmented effects' of remittances, as the researchers show that the argument that the negative impact of brain drain could be mitigated by its favorable effect on remittances was not generally true. He showed that brain drain is associated with a lower rather than a larger flow of remittances. Other researchers like Banga and Sahu (2010) further argued that regardless of the usage of remittances – either for investment, consumption or in purchasing other assets – it has a positive impact on economic growth of the source countries by enhancing aggregate demand for goods and services. To them, migration creates an avenue for capital transfer – finance and physical technology which could influence the economic, political and social life of the people – to the source region, which has a developmental impact. Therefore, the real

effects of brain drain and remittances have not received a clear cut.

As sound as some assertions of the mitigating impact or remittances appears, there is no such evidence in African countries, given the current indices of low investment, high rate of unemployment, increase in mortality rates, reduction in life expectancy, political instability and the problem of achieving meaningful economic growth among others.

To begin with the mitigating impact of remittances on poverty reduction (as reported by Muhammad, Arif and Quayyum, 2012; Muriel, 2015; Bogaards, 2016); Jordanna (2015) reveals that African countries accounted for 75% of the poorest countries of the world in spite of the huge remittances flow to the region. The hydra-headed monster of poverty in Africa endangers more than 500 million people suffering from water-borne diseases, with more than 50% of Africans suffering from water-related diseases like cholera, and 109 million of Nigeria falls in this category (WHO, 2015). Nigeria is also ranked the fourth country in the world with the largest population without access to improved drinking-water despite being the highest African country with huge inflows of remittances. The educational sector also in Africa has not experienced any tremendous change due to remittances flow, as 80% of African women are without education (WHO, 2015). The World Bank (2015) research shows that poor education – among women in this region – make them more vulnerable to sickness like AIDS, and less likely to immunize their children due to illiteracy and ignorance.

Global Finance (2017) reveals that the ten countries with the highest population living in extreme poverty are located in sub-Saharan countries. The data shows that more than 414 million of the population of this region lives in abject poverty, which according to World Bank represents 49% of the population of sub-Saharan Africa (World Bank, 2015). The continuous increase in extreme poverty in Africa has led to approximately one in every three people living in the region being undernourished (Jonathan, 2017). The problem of food insecurity in Africa still continues on an increase of more than 239 million people (approximately 30% of the population) are poorly fed. Africa has the highest percentage of people living in hunger in the world (Agriculture Organization, 2016).

More also, in terms of improved health outcomes resulting from remittances cannot be affirmed in Africa given the deteriorating state of healthcare facilities and health outcome

in Africa. As estimated in the United Nation Millennium development Project (UNMDP, 2012), Malaria alone account for more than 1 million children's deaths in Africa. The malaria death recorded in Africa accounted for 90% of the cases of malaria's death in the world, and 80% of the victims are African children. Furthermore, it was also estimated in the millennium project that every 30 seconds, children in Africa die of malaria and approximately 3000 each day. Neonatal and post-natal mortality rate was on an increase verge in Africa also, as African women were estimated to be 230 percent likelihood to die during pregnancy and childbirth compared to 1/4000 women in North America. In sum, 1 out of 16 African women is likely to die during childbirth.

Driving home to West Africa, it has been a general belief that West African countries are afauteuil of high-risk market for investment because of factors such as bad governance, violent attack, and unstable macroeconomic policies among others. All these factors indicate that majority of the income remitted to this region cannot be efficiently utilized due to weak institutional frameworks – poor political and social environment. Sani, Zuber, Stojilovska and Koneska (2012) argued that international agreement and migration policies, especially in the LDC's can leads to high rate of unemployment since many LDC's are large recipients of migrant's flow. In West Africa, for instance, the Economic Community of West African State (ECOWAS) – an international agreement formed by member states – permits members citizens to stay in another country within the region for a period of 90 days without an international passport, can lead to serious unemployment. Sani, therefore, argued that such migration will bring the challenges of integrating these migrants into the working economy. Such free migration will, in turn, result in job competition between the migrants' population and the domestic workforce. Free migration too is associated with fiscal costs on the host region – in the provision of social services to the people – which tends to incur more cost on the government.

At the peak of the problems of brain drain is the migration of medical and academics professionals in LDC's, and most especially West African countries. Ethiopia, Nigeria, Ghana, and Kenya were the highest countries affected with brain drain in sub-Saharan Africa (Jonathan, 2017). From 1993 to 2004, the number of Ghanaian's trained medical staff that left the country to work abroad was estimated at 68% of the total trained medical staff (Sani et al., 2012). Also, Lalla (2012) posit that more than 10,000 academia in tertiary institutions in Nigeria left the country between 1986 and 1990. Furthermore, over 30,000 people left the industrial, public and private organization within the same period. His estimate revealed that 64% of Nigerians in USA age 25 and above have a university degree. This pinpoint to the fact that developed countries lived and harnessed the human capital from developing countries which should contribute to the growth of their domestic countries after much investment in terms of education funding by developing countries. These findings made some authors argue that brain drain is an obstacle to

development in the LDCs (Adams, 2005). For example, migration of health workers has been held conventionally as being dangerous to the source countries development.

Also, in the medical sector of Nigeria for instance, New Telegraph (2007) reports that more than 500 medical professionals (doctors) emigrate to the country annually. The information obtained from the interview of Mike Ogirima – President of the Nigerian Medical Association (NMA), more than 10,000 doctors' currently practice outside the country. This conformed to the earlier proposition gave by the Medical and Dental Council of Nigeria (MDCN) that more than 10,000 medical doctors are in the diasporas in search for greener pasture, and were now practicing medicine. The report also stated that about 90% of those working outside the country are trained in Nigeria where they obtained their capacity. Ogirima further said that Nigeria government has invested in the education of this people only to be harnessed by developed countries. He linked this menace to the poor working environment and lack of necessary technology for the doctors to work with and poor working conditions.

As reported in World Bank (2017), Nigerian living abroad, on the average, remits more than \$23,721.1 million annually from 2010 to 2017, which is the highest remittances in West African countries as well as African counterpart, and the 7th largest in the world. Liberia on the other hand also had its remittances amount to \$508.6 million annually, and bearing in mind that on the average, Liberia has its average remittances as a percentage of GDP equals 18.5; and Gambia with the highest remittances as percentage of GDP of 19.8% and on the average of \$177 million remitted annually from 2010 to 2017. But despite these above data, West African countries are still wallow in abject poverty, high unemployment, low investment, lack of incentives to attract foreign investors, and these have transcendent to act as a cog to the wheel of economic growth and development in Africa. Therefore, the huge remittances flow to West African countries, had not shown a clear-cut impact on developmental indices of this region, hence the motivation for this study.

II. CONCEPTUAL FRAMEWORK

The Concepts of Human Capital Flight

Human capital flight simply refers to the migration of highly skilled or well-educated individuals for better opportunities. The benefits from skilled migration refer to as brain gain, and the cost is referred to brain drain. Human capital flight always involves the movement of skilled professionals from less developed countries to developed ones. Andrew and Baomin (2015) identified four factors of brain drain in Africa which are economic factors, social and educational factor, push factors and pull factors. The economic factor is due to the deterioration in the economic performance of LDC's (Kwok and Leland, 1982; Docquier and Rapoport, 2012). Social and educational factors are the migration due to advancement in education (Dadoo and Takyi, 2002). The pull factor is due to

wage differential between the developed and developing countries (Todaro, 1969; Murphy, Shleifer and Vishny, 1989; Krueger, 1997), and the push factors are high rate of unemployment in the domestic countries, political instability, the high cost of running businesses, underdevelopment, lack of research facilities and institutes, political and social unrest, employment discrimination, economic lack of freedom, poor working conditions, etc. (Massey et al., 1993; Carree, Van Stel, Thurik and Wennekers, 2002; Kaba, 2011; Ngoma and Ismai, 2013).

Concept of Remittances

Remittances are the transfer of an asset, usually in monetary term from migrants' family living outside their countries to family members in the source countries. According to International Monetary Fund (IMF, 1999), remittances only account for migrants that have stayed up to one year in their destination region, while those below one year and the self-employed migrants are excluded. International organization for Migration (IMO) 2006, broadly defined remittances as the financial flows associated with migration or migrants' workers or immigrants to a relative in the country of origin. On the other hand, International Organization for Migration (IOM, 2008), defines remittances as the portion of migrant workers' earnings sent back from the country of origin.

Remittances in the world are now forming a huge source of income for developing countries (Caitlin and Mohamed, 2008). Arguably, remittances have been established globally as a key factor to reduce poverty because of its impact on micro and macroeconomic performance and development. One of the major reasons why remittances were seen as a key factor in mitigating poverty is due to the fact money sent gets to the target people who need them most and the fund is well utilized in the fashion that results in the greatest benefits and betterment for individual recipient household. Also, remittances sent are at minimal cost with little waste of resources, and as such, it is conventionally believed that remittances can potentially be an ideal tool for economic development.

Concept of Economic Growth

From various conventional views emanated from different economists, economic growth was viewed as a result of the transition of surplus labour from the capitalist sector and the subsistence sector (Lewis, 1954). To Harris and Todaro (1970) and Fields (1980) economic growth and development involves the movement of people from rural to the urban area due to expected income differentials between rural and urban. Solow and Swan (1956) on the other hand viewed growth in economic output as basically a function of the stock of capital (capital formation/accumulation), coupled with the growth rate in labour force and technological progress. Denison (1967) also buttresses the importance of capital accumulation in propelling economic growth. Romer (1986) considered the endogenous aspect of economic growth, and to him, economic growth hinged on investment in human capital, innovation,

and knowledge. Economic growth in the long-run to Romer was seen as a function of investment in research and development which will increase the incentive for innovations. Other empirical work had also established economic growth to different factors such as foreign aids or foreign direct investment (Papanek 1973; Chinery and Strout, 1966; Victor 1987) foreign aid and investment (de Mello, 1999), human capital investment (Lucas, 1988), and political, institutional and the degree of accountability (Owen, 1987) among others as a source of economic growth.

III. LITERATURE REVIEW

Adela and Dietmar (2016) based their study on the impact of remittances on economic growth of six highest remittances receiving countries of Macedonia, Albania, Bosnia Herzegovina, Moldova, Romania, and Bulgaria, using data from 1999-2013. Their result shows a positive and significant relationship with economic growth as well as an increase in growth in relation to increasing in remittances relative to GDP.

Other studies in the quest to examine the impact of remittances on economic growth posited by Muhammad and Asmatullal (2011) in their study of workers' remittances and economic growth in Azerbaijan and Armenia countries. Using the ordinary least squares (OLS) methodological approach, they found that remittances are significant and have a positive impact on economic growth and development for the area under study. Hence, they believed strongly that adequate macroeconomic policies that promote remittances will boost the economic growth and the efficient utilization of the remittances received will generate the same result.

Katsushi et al. (2011) also examined remittances, economic growth and poverty from Asian countries in order to re-examine the effects of remittances on the growth of GDP per capita using annual panel data from 24 Asian and Pacific countries. Their result shows a positive significant relationship between remittances inflows and economic growth. Furthermore, they also observed that volatility in capital outflow in form of remittances and foreign direct investment (FDI) is harmful to economic growth. This means that despite the beneficial impact of remittances on economic growth, they also saw it as a source of output shocks. Moreover, it was also observed that remittances contribute to poverty reduction. Therefore, they conclude that remittances are a potentially valuable component of broad-based development efforts.

Kanu and Ozurumba (2013) also provide an empirical support on the subject of remittances and economic growth. Focusing on the sub-Saharan African countries with evidence from Nigeria, South Africa, and Ghana, their result shows that migrant's remittances have a positive impact on economic growth of the aforementioned economies. Also considering the causal relationship between remittances and economic growth, remittances were found to Granger cause economic growth in Ghana and South Africa, but the report shows that

the impact was felt more in South Africa than Ghana. The opposite was the case for Nigeria where remittances were not found to Granger causes GDP, rather economic growth was seen to granger causes remittances.

Bakare, Kashif, and Amna (2014) examine human capital flight and its impact on the economy, a case study of Pakistan. In their quest to examine whether there exists a correlation between human capital flight and government policy. With data from 1980-2011, it was found that workers' remittances have a positive impact on economic growth and per capita income.

Pernilla and Josfin (2014) in their study of remittances and development, with evidence from 99 developing countries, using annual panel data of these countries, the researchers aimed at answering the question of how impactful is remittances to the broader aspect of development? Using development index as part of their dependent variable, they found out that there exists a positive relationship between remittances and the level of human development in developing countries.

Achouak and Mohamed (2013) study the effect of remittances on economic growth through education in Tunisia, with the aim of studying the effect of migrants' remittances on economic growth. To this end, the application of co-integration on the variables of interest shows a long run relationship in the variables of interest. The obtained result also indicates that the direct effect of remittances is negative, while the indirect effect induced by the inclusion of education is positive. This result conforms to what other researchers obtained in their studies such as Achouak, Mohamed and Mourad (2013) but contradict that of Giuliano and Arranz (2009), Chami et al (2005), Azam and Guber (2006), and other literature reviewed earlier.

Siddique, Selvanathan and Selvanathan (2012) in his empirical analysis of remittances and economic growth with evidence from Bangladesh, India and Sri Lanka, employed the Granger-causality test approach to examine the causal link between remittances and economic growth in the three countries (Bangladesh, India and Sri Lanka). Using a time series data of 25 years for each country, the researcher found that growth in remittances does not lead to growth in Bangladesh. Furthermore, it was observed that there is no causality between remittances and economic growth in India; while Sri Lanka exhibit bidirectional causality between remittances and economic growth, meaning that economic growth and remittances influence each other. The result, however, conform to the one obtained by Achouak, Mohamed and Mourad (2013), Chami et al. (2005), Azam and Guber (2006), Thanh Le (2008).

Muriel (2015) further examine the impact of remittances on economic growth in four selected countries of West Africa countries (Cameroon, Cape Verde, Nigeria, and Senegal) from 2000-2010. Remittances flow to Nigeria and Senegal was found to exert a positive impact on economic growth which

conforms to the result passed by Achouak et al. (2013), and Barnes et al. (2015). On the other hand, remittances flow to Cape Verde and Cameroon was found to exert negative impact on economic growth which further support the result obtained by Achouak, Mohamed and Mourad (2013), Chami et al. (2005), Azam and Guber (2006), Thanh Le (2008), and Khatiwada (2005).

Wolfgang, Tim and Volker (2007) in studying education, unemployment, and migration in India uses a two regions model and took unemployment, education and interregional migration as being endogenous. The regions were divided into the poor region and the rich region. The poor region exhibits low wages and high rate of unemployment, and migrants to the rich region were disproportionately high skilled labour. They observed that brain drain from the poor region was motivated by strong incentives to acquire skills even for immobile workers. It was also observed that regional shocks tend to affect both regions in a symmetric fashion, and skilled-based technological change reduces wages of the unskilled. In conclusion, both education and migration decisions are found to be distorted by uniform unemployment compensation, which proves the corrective subsidization.

Anastasia and Christos (2014) investigate the macroeconomic effects of remittances in two small, transition emigration countries, namely Moldova and Albania, employed the Keynesian macroeconomic modelling, and examines the impact of remittances on three macroeconomics variables (consumption, imports and investment) of the aforementioned economy, in order to assess the use of the growth potential of remittances. Their results show that remittances exert a positive impact on consumption, import and investment in the two countries. Their result further shows that a remittance has a greater impact on Albania than Moldova, but exert more impact on investment and import more in Moldova than experienced in Albania. They, therefore, conclude that both Albania and Moldova should focus on finding the utilization patterns of remittances that can bring the best results in terms of productive investments and long-term growth.

IV. METHODOLOGY

This work will adopt the augmented Solow model of economic growth. The Solow growth theory postulates that economic growth occurs when the relative share of capital increase than that of labour from the national income. To them, increase in capital relative to labour in national income creates economic growth since the productivity of labour will increase when more capital is given to them (i.e increase in capital per labour). More also, they posit that marginal productivity of labour is higher in the less developed economy, and therefore, increase in capital investment will produce higher returns than countries with large capital accumulation.

Neoclassical model is built on four variables which are output (Y), capital (K), Labour (L), and Knowledge (A). At every

point in time, it was assumed that capital, labour, and knowledge are combined to produce the economic output. The production function can be stated as:

$$Y(t) = F[K(t), A(t)L(t)] \quad \text{--- (1)}$$

Some basic assumptions of this theory are that labour force growth rate is given as $n(t)$ and the growth rate of knowledge is $g(t)$, investment and saving are considered to be a fixed proportion of output and the production function exhibit constant return to scale (CRS), capital and labour has perfect factor substitutability and diminishing marginal productivities. The Cobb-Douglas version of augmented Solow growth model can be stated as:

$$Y(t) = K^\delta AL^{1-\delta} \quad \text{--- (2)}$$

Obtaining the log of 4.2 and adding the other variables of interest yield:

$$\ln RGDP_{it} = \ln PC_{it} + \ln LF_{it} + \ln REM_{it} + HCF_{it} + TEC_{it} + \ln PCI_{it} + \mu_t \quad \text{--- (3)}$$

This model will be used to examine the impact of remittances on economic growth of West African countries.

- *LnRGDP* is the log of real gross domestic product
- *LnPC* is the log of fiscal capital, and it is expected to be positively related to economic growth,
- *LnLF* is the log of labour force, and it is expected to exert positive relationship with economic growth.
- *LnREM* is the log of remittances received, and the a priori expectation of this variable should be positive.
- *HCF* represent human capital flight –proxy by net migration (also used by Bakare, et al., 2014) – it is expected exert negative impact on economic growth. Also, it should be noted that this variable is not logged because most of the data are negative.
- *TEC* represent technology – proxy by total factor productivity –and it is expected to exert positive relationship with economic growth.
- *LnPCI* is the log of per capita income. We expect a positive relationship between per capita income and economic growth.

V. RESULT DISCUSSION

Panel Unit Root Test

In order to ascertain the behavioural pattern of the variables of interest, the unit root test will be carried out – simply to examine the order of integration of the variables. The Levin-Lin-Chu panel data unit root test will be employed since it assumes a common autoregressive parameter for all panels. The Levin-Lin-Chu test with panel-specific means, but no time trend, requires that the number of time periods grow more quickly than the number of panels, so the ratio of panels to time periods tends to zero. The test involves fitting an augmented Dickey-Fuller regression for each panel; and it

required that the number of lags to include be selected based on the AIC with at most 10 lags.

Variables	ADF Statistic at Level	Prob. Value	ADF Statistic at First Difference	Order of integration
RGDP	16.8772	1.0000	-2.6783	0.0037
PC	0.5539	0.7102	-2.6743	0.0037
LF	-0.2965	0.3834	-4.5773	0.0000
REM	-0.0853	0.4660	-4.6342	0.0000
HCF	-4.3713	0.0000	-	-
PCI	0.0853	0.5340	-7.1353	0.0000
EDU	0.5000	0.6914	-17.1019	0.0000
TFP	5.7701	1.0000	-8.3303	0.0000

The unit root result presented above shows that it is only human capital flight that is stationary at the level form, while real GDP, labour force, remittances, stock of physical capital, per capita income, education and technology are stationary at first difference. This is a necessary step to proceed into the analysis.

Cointegration

Having ascertained the individual order of integration of the variables of the model, it is important to examine the relationship of these variables in the long-run. The Westerlund cointegration technique developed in 2007 will be employed in this analysis. This test examines the absence of integration by determining whether there is an error correction for each individual in the model or for the entire panel as a whole. The test encompasses large degree of heterogeneity both in the short-run dynamics and the long-run cointegrating relationship, as well as dependence on within and across the cross sectional unit (Persyn, 2010).

The G_t and G_a statistics test for the presence of short-run relationship or long-run cointegrating for at least one individual country. The statistics are computed using the weighted average of the individually estimated t-ratio's in the model. On the other hand, the P_t and P_a test statistics examine the pool information across the sectional unit. The rejection of H_0 suggests the rejection of the presence of cointegration for the model.

Statistics	Stat. value	Z – value	Prob.
G_t	-0.737	6.424	1.000
G_a	-3.061	5.046	1.000
P_t	-6.063	1.924	0.973
P_a	-5.143	1.624	0.948

The cointegration result presented in the table above shows that G_t , G_a , P_t and P_a all have their probability greater than

5% level. This shows that the variables are cointegrated in the long-run, both on country's specific studies and joint analysis.

Hausman Test

The Hausman test can help us to the analytical method between the fixed effect or the random effect. The test examine whether there are correlation in residuals of each countries The null hypothesis of this model is the preference of random effect to fixed effect against the alternative hypothesis of fixed effect (Greene, 2008). The decision rule here is that the appropriate model to be used is fixed effect if the probability level is less than 5%.

Chi-Square	Prob.	Decision
10.95	0.0523	Random Effect

The table above shows that the probability value of the Hausman test is greater than 5 percent. Hence we conclude that the appropriate model for this analysis is the random effect.

The Result

Variables	Coefficient	t – value	Prob.
<i>C</i>	11.28117	34.81*	0.000
<i>LnREM</i>	0.0911057	12.08*	0.000
<i>HCF</i>	1.28e-08	0.67	0.505
<i>LnLF</i>	0.0495162	5.00*	0.000
<i>LnPCI</i>	0.9522287	28.24*	0.000
<i>TEC</i>	6.64e-06	2.16*	0.031
<i>LnPC</i>	0.1184944	11.12*	0.000
<i>EDU</i>	0.0069146	8.45*	0.000

Where * represent 5% level of significance.

Thus

$$\begin{aligned} \ln RGDP = & 11.28 + 0.09 \ln REM + 1.3e^{-8} HCF + 0.05 \ln LF \\ & + 0.95 \ln PCI + 6.6e^{-6} TEC + 0.12 \ln PC \\ & + 0.01 EDU \end{aligned}$$

The result above shows that all the variables conformed to their a priori theoretical expectation. The result shows that real GDP is relatively inelastic in relation to all the variables used in the model. Also, the model shows that a one percent increase in remittances leads to 0.09 percent increase in economic growth in the long-run. The coefficient of brain drain was found not to be significant in the model.

Furthermore, the coefficient of labour force shows that a one percent increase in labour force will lead to 0.05 percent increase in economic growth. Per capita income also exerts a positive relationship with economic growth. The result shows that a one percent increase in per capita income will lead to 0.95 percent increase in economic growth. Technology also exert positive relationship with economic growth, the percentage increase of this variable on growth is relatively small. Stock of fiscal capital also shows a positive relationship

with economic growth. It also shows that a one percent increase in stock of fiscal capital will lead to 0.12 percent increase in economic growth in the long-run. Lastly, education shows a positive relationship with economic growth. It equally shows that a one percent increase in education leads to 0.01 percent increase in economic growth in the long-run.

VI. SUMMARY OF FINDINGS, POLICY IMPLICATIONS AND RECOMMENDATION

The research employed data from twenty African countries namely: Nigeria, Ghana, Benin, Senegal, Niger, Cote d'voire, Gambia, Rwanda, Tanzania, Sudan, Kenya, Ethiopia, Tunisia, Morocco, Egypt, Algeria, Zambia, South Africa, Namibia and Mozambique; and with variables such as real GDP, stock of physical capital, labour force, remittances received, per capita income, human capital flight, education and technology- proxy by total factor productivity. The data were collected for the rage of 40 years (1977-2016).

The result shows that remittances, per capital income, labour force, stock of physical capital, education and total technology exert positive relationship with economic growth, while human capital flight shows non-significant relationship with economic growth.

The implication of this result, firstly, is that remittances can serve in ameliorating the impact of skilled migration on economic growth. Hence, we recommend proper channeling of the remittances receive to productive ventures. This basic problem with this is that remittances flows directly to some targeted population. Hence, the government should re-orientate the citizens on the need to utilize the realized remittances. Also, human capital flight has no impact on economic growth in Africa. The implication is that proper policies might be neglected in curbing this menace. We recommend that proactive effort be taken to cub the problem of human capital through the provision of basic necessities in African countries

Also labour force and capital stock shows positive relationship with economic growth. Given the current indices of high unemployment, Poverty, low income and saving etc, human capital development might not be feasible and capital accumulation tends to be low. Therefore we recommend that government in this region should take active part in creating more enabling environment for entrepreneurs' activities, creation of jobs, provisions of social amenities, etc. this will promote the efficiency of labour in Africa.

REFERENCES

- [1]. Achouak B., & Mohamed, E. H., (2013). The Effect of Migrant Remittances on Economic Growth through Education: the case of Tunisia; *international Journal of Economics and Management Science*, Vol 2(8)
- [2]. Adela S., and Dietmar M., (2016). Remittances and their impact on Economic Growth; *Journal for Social Science*, Vol 12(2), pp(12-15).

- [3]. Agriculture Organization (Ed.). (2014). *The state of food insecurity in the world 2014: Strengthening the enabling environment for food security and nutrition*. Food and Agriculture Organization.
- [4]. Anastasia B., & Christos N., (2014). Emigrants Remittances and Economic Growth in Small Transition Economies: The case of Moldova and Albania; *Journal of Economics and Business, Vol 17 (2)*
- [5]. Azam M., & Khan A., (2011). Workers' Remittances and Economic Growth: Evidence from Azerbaijan and Armenia; *Global Journal of Human Social Science, USA*.
- [6]. Bakare A., Najimdeen K., & Durran A. T. (2014). Human Capital Flight: Impact and Challenges on Economy; A Case of Pakistan; *Mediterranean Journal of Social Sciences, MCSER publisher, Rome-Italy, Vol 5(1)*
- [7]. Banga, R., & Sahu, P. K., (2010). Impact of remittances on poverty in developing countries. UNCTAD, United Nations, Switzerland.
- [8]. Beine M., Docquier, F., & Rapoport H., (2008). Brain Drain and LDCs' Growth: Winners and Losers; Centre for International development working paper pp (6).
- [9]. Bogaards, C. (2016). Labor Remittances and Economic Growth in Developing Countries. Do Current Theories Travel Worldwide? (Bachelor's thesis).
- [10]. Caitlin C., & Mohamed A. H., (2008). UK Somali Remittances Survey: Department for International Development Profile Business Intelligence Limited, USA.
- [11]. Carree, M., Van Stel, A., Thurik, R., & Wennekers, S. (2002). Economic development and business ownership: an analysis using data of 23 OECD countries in the period 1976–1996. *Small business economics, 19(3)*, 271-290.
- [12]. Chami R., Barajas, A., Fullenkamp, C., Gapen M., & Montiel, R. (2009). *Do workers Remittances Promote Economic Growth? IMF Working Paper No 09(153)*. Washington DC: International Monetary Fund.
- [13]. Chenery, H. B., & Strout, A. M., (1966). "Foreign Assistance and Economic Development." *American Economic Review* 66(4):679-733.
- [14]. De Mello, L. R., (1999). Foreign Direct Investment-led Growth: Evidence from Time Series Panel Data, *Oxford Economics Paper, Vol. 51(1)*, pp(133-151)
- [15]. Denison E. F., (1967), Why Growth Rates Differ: Post-War Experience for Nine Western Countries, Washington DC
- [16]. Docquier, F., & Rapoport, H. (2012). Globalization, brain drain, and development. *Journal of Economic Literature, 50(3)*, 681-730.
- [17]. Doodoo, F. N., & Takyi B. K., (2002). "Africans in the Diaspora: Black-White Earnings Differences among America's Africans." *Ethnic and Racial Studies, 25(6)*, 913-941.
- [18]. Fields, G. S. (1980). *Poverty, inequality, and development*. CUP Archive.
- [19]. Giuliano, P., & Ruiz-Arranz, M. (2009). Remittances, financial development, and growth. *Journal of Development Economics, 90(1)*, 144-152.
- [20]. Global finance ((2017). The annual global financial report. Routledge.
- [21]. Görllich, D., & Trebesch C., (2008). "Seasonal Migration and Networks - Evidence on Moldova's Labour Exodus." *Review of World Economics, 54(1)*: pp. 107-133.
- [22]. Harris, J. R., & Todaro, M. P. (1970). Migration, unemployment and development: a two-sector analysis. *The American economic review, 60(1)*, 126-142.
- [23]. International Organization for Migration. (2008). *World migration 2008: Managing labour mobility in the evolving global economy* (Vol. 4). Hammersmith Press.
- [24]. Jonathan, G., (2017); Poorest Countries in the World: Global news and insight for corporate financial professionals, London, United Kingdom.
- [25]. Jordanna, K. K. (2015). Dealing in desire: Asian ascendancy, Western decline, and the hidden currencies of global sex work. University of California Press.
- [26]. Kaba, A. J. (2011). The Status of Africa's Emigration Brain Drain in the 21st Century. *Western Journal of Black Studies, 35(3)*.
- [27]. Kanu, S.I., & Ozurumba, B.A. (2013). Migrant's remittances and economic growth in sub-Saharan Africa: Evidence from Nigeria, Ghana and South Africa. *Interdisciplinary Journal of Contemporary Research in Business, 4(10)*, 537-550.
- [28]. Katsushi I., Raghav G., Abdilahi A., & Kaicker N., (2011). Remittances, Growth and Poverty: New Evidence from Asian Countries; *Research institute for economics and Business Administration, Kobe University Japan*
- [29]. Khatiwada, Y. (2005). Remittance Inflows in Nepal and Emerging Issues. In *Second Global NRN Conference, Kathmandu, Nepal*.
- [30]. Krueger, A. O. (1997). *Trade policy and economic development: how we learn* (No. w5896). National Bureau of Economic Research.
- [31]. Kwok V., & Leland H., (1982). An economic model of brain drain: *The American Economic Review, 72(1)*:91-100.
- [32]. Lalla, B., & Barka, N., (2012). Brain Drain in Africa: Facts and Figures; United Nations Economic Commission for Africa (ECA).
- [33]. Lewis, A.W., (1954), "Economic Development with Unlimited Supplies of Labor," *Manchester School of Economic and Social Studies, 22*, (May): 139-191.
- [34]. Lucas, R.E. (1988). On Mechanics of Economic Growth. *Journal of monetary Economics, 22* (July):3-42.
- [35]. Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., & Taylor, J. E. (1993). Theories of international migration: A review and appraisal. *Population and development review, 431-466*.
- [36]. Muhammad J., Arif U., & Qayyum A., (2012). Impact of Remittances on Economic Growth and Poverty; *Academic research international, Vol 2(1)* pp 2.
- [37]. Muhammad, A., Asmatullah K., (2011). Workers' Remittances and Economic Growth: Evidence from Azerbaijan and Armenia. *Global Journal of Human Social Science, XI*. 41-46.
- [38]. Muriel A. A., (2015). Impact of Remittances on Economic Growth: Evidence from Selected West African Countries (Cameroon, Cape Verde, Nigeria and Senegal); *Institute for Social Development, Faculty of Economic & Management Science, University of the Western Cape (UWC)*, South Africa.
- [39]. Murphy, K. M., Shleifer, A., & Vishny, R. W. (1989). Industrialization and the big push. *Journal of political economy, 97(5)*, 1003-1026.
- [40]. New Telegraph (2017), 15,000 doctors dump Nigeria for overseas: <https://newtelegraphonline.com/2017/05/15000-doctors-dump-nigeria-overseas/>
- [41]. Ngoma, A., and Ismail, N. (2013). The determinants of brain drain in developing countries. *International Journal of Social Economics, 40(8)*:744-754.
- [42]. Owens, E., (1987). *The Future of Freedom in the Developing World*, Pergamon Press
- [43]. Papanek, G., (1973). "Aid, Foreign Private Investment, Savings, and Growth in Less-Developing Countries," *Journal of Political Economy, 81*:120-130.
- [44]. Pernilla L., & Ångman J., (2014). Remittances and Development- Empirical evidence from 99 developing countries; Department of Economics Uppsala University, PP(7-9)
- [45]. Persyn, D. (2010). XTWEST: Stata module for testing for cointegration in heterogeneous panels.
- [46]. Riccardo F., (2006). Remittances and the Brain Drain; IZA Discussion Paper No. 2155, IZA World of Labour, Belgium Germany.
- [47]. Romer, P., (1986). "Increasing Returns and Long-Run Growth," *Journal of Political Economy, (October)*: 1002-1037.
- [48]. Sani, D., Zuber, S., Stojilovska, A., & Koneska, C., (2012). Migration and development: the effects of remittances on education and health of family members left behind; *An Analytical Journal, Vol 5(1)*.
- [49]. Schiff, M., & Ozden, C., (Eds.). (2007). *International migration, economic development & policy*. The World Bank.
- [50]. Sherr, Kenneth, Antonio Mussa, Baltazar Chilundo, Sarah Gimbel, James Pfeiffer, Amy Hagopian, and Stephen Gloyd. "Brain drain and health workforce distortions in Mozambique." *PloS one* 7, no. 4 (2012): e35840.

- [51]. Siddique, A., Selvanathan, E. A., & Selvanathan, S. (2012). Remittances and economic growth: empirical evidence from Bangladesh, India and Sri Lanka. *Journal of development studies*, 48(8), 1045-1062.
- [52]. Solow, R., (1956), "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics*, 70(February): 65-94.
- [53]. Swan, T. W. (1956). Economic growth and capital accumulation. *Economic record*, 32(2), 334-361.
- [54]. Thanh Le., & Philip B. (2011). Remittances or technological diffusion: Which is more important for generating economic growth in developing countries? *Journal of Development Economics*, Vol 11 (7)
- [55]. Todaro, M. P. (1969). A model of labor migration and urban unemployment in less developed countries. *The American economic review*, 59(1), 138-148.
- [56]. United Nation Millennium development Project (2012). The millennium development goals to sustainable development goals. *The Lancet*, 379(9832), 2206-2211.
- [57]. United Nations Migration Report (2015). International migration report 2015 (Vol. 240). United Nations Publications
- [58]. Victor L., (1987). "Aid and economic growth in the sub-Saharan: Africa: The recent experience," *European Economic Review*, 32; 1777-1795.
- [59]. Wolfgang E., Krieger T., & Meier V., (2007). Education, Unemployment and Migration; *CESifo Working Paper No. 2119: Volker Meier Ifo Institute for Economic Research at the University of Munich Germany*
- [60]. World Bank (2015). Migration and Remittances Unit. Washington, DC, <http://go.worldbank>.
- [61]. World Health Organization. (2015). *The Selection and Use of Essential Medicines: Report of the WHO Expert Committee, 2015 (including the 19th WHO Model List of Essential Medicines and the 5th WHO Model List of Essential Medicines for Children)* (No. 994). World Health Organization.