An Evaluation of the Impact of Migration on Human Capital Development: Evidence from the ECOWAS

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ABSTRACT

Migration is recognized by many economists as a pathway to enhance living standards, yet its impact on human capital development, particularly within the ECOWAS region, remains underexplored. While prior research has predominantly examined the effects of migration on economic growth, production efficiency, and labour productivity, there exists a notable gap in understanding its effects on human capital development. Using the dynamic panel data technique within the framework of the generalized method of moment technique, the study examined the role of migration in human capital development in ECOWAS sub region over the period from 1996-2022. The study found a significant positive impact of migration, remittances and governance on human capital development. However, the impact of net-migration was negative. It concludes that migration imposes no direct cost on the government and should be encouraged. Based on the findings, the study recommends the formulation of an effective bilateral migration agreement within the ECOWAS region which should aim to facilitate skilled, semi-skilled, and low-skilled migration, accompanied by the implementation of coordinated training programs.

Keywords: Migration; remittances; human capital development; ECOWAS

BACKGROUND TO THE STUDY

Human capital development has been viewed from diverse angles as it has been defined to represent and aggregate of an individual's skills, knowledge and competencies. As observed by Potelienė and Tamašauskienė (2014), human capital development is defined as cumulative personal assets which comprise of acquired skills, knowledge, entrepreneurship, educational achievements, motivation, among others. Equally, Aluko, 2015) contended that human capital development has to do with the enrichment of the skills of individuals, their knowledge and productivity as well as innovative capacities. In another vein, the term migration is the movement of people outside the shores of their countries with mainly the aim of seeking greener pastures. As observed by various scholars, migration has the tendency to improve the economic fortune of countries, especially those whose revenue generating capacity is low. In a similar reasoning, Hu Wang and Zhang (2023) contended that migration could be a stimulant to modernization and productivity, resulting into mutual advantages for both country where people migrants out from and the country where migrants settle. However, despite this argument, some scholars such as Ita (2020) were of the opinion that the persistence of migration may lead to a vicious circle of poverty and thus retards development if such phenomenon is allowed to persist as it will erode the region's human capital assets. In another dimension, King (2022) and Ness (2023) were of the contention that migration could aggravate underdevelopment in the country where people migrate from.

In linking migration to human capital development, Torruam and Abur (2014) were of the opinion that migration serves as an important mechanism through which human capital development can be achieved. Through migration, remittances are generated as migrants send money to their home countries. In recent times, migrant remittances have been a source of revenue generation to developing countries, ECOWAS

countries inclusive. Through such, many households have been able to send their children to schools; provide healthcare and engage in several productive venture which assist in boosting human capital. The nature of export commodities that generate foreign exchange to ECIWAS countries are such that revenue generation in these countries will continue to dwindle as these commodities comprise mostly of primary products that have several substitutes as the international level (Nzeh, Ogwuru, Okolie & Okolie, 2022). To argument their revenue, migration and its associated remittances should play a major role.

In this paper, the focus is to examine the role of migration in influencing human capital development in the ECOWAS bloc. Formed in 1975, the ECOWAS is an economic bloc formed with the aim among which is to ensure free movement of goods and persons within member countries. It is comprised of 15 member countries among them are: Nigeria, Senegal, Togo, Sierra Leone, Ghana, Gambia, Benin, Liberia and Ivory Coast. The choice of ECOWAS in this paper is based on the fact that the countries that comprise it are mainly developing countries that battle with the scourge of poverty, leading to massive migration of their citizens for greener pastures. Within the Economic Community of West African States (ECOWAS), the role of migration in enhancing human capital development is an area that requires deep empirical attention considering that remittances have become a major source of revenue to member countries. It been observed that some countries within this economic bloc such Nigeria have attracted much remittances over the years. To the best of the authors' knowledge, literature on the impact of migration on human capital development is scant in the ECOWAS bloc. From reviewed literature, only Musibau, Yusuf, and Gold (2019) did something similar but this present study is set to build on this past study by employing other relevant explanatory variables such as migration governance index and technology attainment index and using the GMM technique which provides robust results.

Stylized Fact on Migration and Human Capital Development

The mechanism through which migration plays a role in the supply of the desired workforce, including expatriates which are necessary for human capital development and it is measured by the net migration rate. The other link is classified as indirect channels, which are reflected in the returns of emigrants to their countries by ways of transfer of technology and remittances. Such remittances and technological transfer could be utilized to advance human capital development of the recipient country.
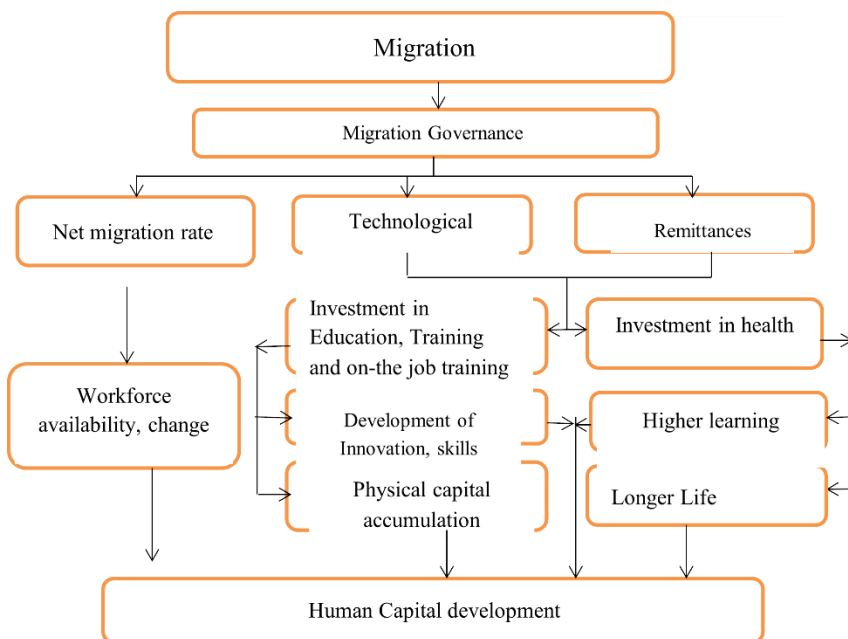

Figure 1: Diagram Linking Migration to Human Capital Development

Source: Authors' Compilation

THEORETICAL FOUNDATIONS

Over the years, some scholars have proffered some theories regarding the factors that shape migration. According to Massey (1993), the Neoclassical migration theorists were of the view that international migration is mainly driven by the decision of individuals maximize their income owing to the differences in wages and employment across different countries. However, the new economics theory of migration view factors such as, such as labour, insurance markets and capital as the major issues that compel households to leave their country of origin in order to reduce income risk. De Haas (2011) was of the hypothesis that high levels of human and economic development encourage higher migration rates through the enhancement of personal knowledge, occupational specialization and aspirations. Seen from a similar angle, Lutz & Bitschnau (2022) traced the evolution of migration patterns to be associated with factors such as changes in demography including shifts in birth and death rates. It is their contention that individuals from less developed countries migrate towards areas offering higher wages. The equilibrium migration transition theory proposes that migration rates are expected to reach equilibrium at a threshold point where relative cross-national wage differentials become equal, resulting in zero net migration.

Empirical Literature

In literature, the link between migration and human capital development has received little empirical attention. Most of empirical works centred on the impact of human capital development on economic development. This paper however, made an attempt to review papers that are related to the nexus between migration and human capital development and the link between population and human capital development bearing in mind that migration affects a country's population size. In analysing the contribution of migration to India's human capital development, Knapp, White and Wolaver (2013) revealed that onward migration played a crucial role as it is a channel through which the monetary rewards to education or human capital development are manifested. In Nigeria, Olarinde (2014) employed the Ordinary Least Squares (OLS) technique to show that a long-run relationship exists between migration, human capital development, and economic growth. The study indicated that migration had a positive effect on human capital formation.

In a study for West African states, Dauda (2020) examined the impact of population dynamics on human capital development. Findings suggested that population dynamic had a negative impact on human capital development. In a similar vein, Fertig, Schmidt and Sinning (2009) examined the impact of demographic change on human capital development in Germany. Findings of the study revealed that considerable and heterogeneous impact of demographic change on the educational attainment of young Germans. In a study involving 147 countries, Deming (2022) showed the existence of the positive impact of migration on human capital development in low-income countries. In a study on the ECOWAS, Gniniguè and Ali (2022) revealed that migrant remittances contributed to human capital accumulation,

METHODOLOGY

This study used annual data that spanned the period from 1996 to 2022. The study first conducted a test to ascertain the behaviour of the variables using the descriptive statistics, the correlation matrix and a test of stationarity using panel Levin, Lin and Chu (LLC) unit root tests. After ascertaining the order of integration of the series the study tested for the existence of cointegration among the series using panel cointegration test. Thereafter, the model was estimated using the dynamic panel techniques based on the Generalized Method of Moments (GMM) developed by Arellano and Bond (Ledhem & Mekidiche, 2021). This approach considers the time series dimension of the data, allowing for the examination of short-run effects. The first step in the procedure for the dynamic GMM is to eliminate the individual effect from dynamic model which could be achieved by taking differences. Secondly, there is need to instrument the regressors

using their lagged values and finally the inconsistency arising from the endogeneity of the explanatory variables is eliminated.

Model Specification

The baseline model that links migration to human capital development is a modification from the works of Ben-Porath (1967) and Grossman (1972) and it is expressed as follows:

$$HCI_t = f\,(netMR_t,\ MGI_t,\ RMI_t,\ EDEx_t,\ HTEx_t,\ TAI_t)\ (1)$$

By building an econometric model of the functional model above, the model is specified thus:

$$HCI_{i_t} = \alpha_o + \alpha_1 netMR_{i_t} + \alpha_2 MGI_{it_t} + \alpha_3 RMI_{i_t} + \alpha_4 EDEx_{it} + \alpha_5 HTEx_{it} + \alpha_6 TAI_{it} + \varepsilon_{it}\ (2)$$

Where: *HCI* = Human Capital index (a proxy for human capital development), *netM R*= Net migration, *MGI* = migration governance indicator, RMI = remittance, *EDEx* = Education expenditure, *HTEx* = Health expenditure, *TAI* = Technology attainment index, ξ = Disturbance term/error term, α_o = Constant term, α_1, α_2, α_3, α_4, α_5 and α_6 are parameters to be estimated.

RESULTS AND DISCUSSIONS

The unit root results in Table 1 show that while human capital index, net migration, health expenditure achieved stationarity at level, others became stationary after the first difference. Thus is both tests of stationarity, the variables had an admixture of I(0) and I(1).

Table 1 Panel Unit Root Result

Variables	Adf Chi-Square & Adf Z-stat at level	Prob.	Adf Chi-Square & Adf Z-stat at 2nd Difference	Prob.	Order of integration	Remarks
HCI	48.5430 -2.01224	0.0125 0.0221			1(0)	Stationary
netMR	121.975 -4.75764	0.0000 0.0000			1(0)	Stationary
REM	19.8487 6.45541	0.9204 1.0000	139.713 -4.9683	0.0000 0.0000	1(1)	Stationary
MGI	49.7232 -0.95294	0.0132 0.1703	217.967 -10.9801	0.0000 0.0000	1(1)	Stationary
EDEx	48.8791 2.92659	0.0162 0.9983	101.983 2.38307	0.0000 0.0000	1(1)	Stationary

HTEx	250.582 -12.7296	0.0000 0.0000			1(0)	Stationary
TAI	7.45608 11.7331	1.0000 0.9989	-2.83017 95.8603	0.0023 0.0000	1(1)	Stationary

Having ascertained the order of integration, the study examined the existence of a long-run relationship among the variables. The results in Table 2 reveal that there is evidence of cointegration among the variables using the Pedroni residual cointegration. This is due to the fact that the probability level of the majority of techniques were less than 5% level of significant. Specifically, the probability level of four out of seven estimates such as Panel v-Statistic, Panel rho-Statistic, Panel PP-Statistic, Panel ADF-Statistic, Group rho-Statistic, Group PP-Statistic and Group ADF-Statistic were found to be less than 5% level of significant. This led to the rejection of null hypothesis of no co- integration.

Table 2 Results of the Panel Co-integration Test

Newey-West automatic bandwidth selection and Bartlett kernel					
Alternative hypothesis: common AR coefs. (within-dimension)					
				Weighted	
		Statistic	Prob.	Statistic	Prob.
Panel v-Statistic		-2.027358	0.9667	-2.812572	0.8740
Panel rho-Statistic		2.654027	0.9647	3.256057	0.9772
Panel PP-Statistic		-3.389235	0.0045	-3.767856	0.0053
Panel ADF-Statistic		-2.989125	0.0214	-5.685315	0.0085
Alternative hypothesis: individual AR coefs. (between-dimension)					
		Statistic	Prob.		
Group rho-Statistic		4.869412	1.0000		
Group PP-Statistic		-5.540721	0.0000		
Group ADF-Statistic		-2.745666	0.0030		

Since the co-integration test indicated the presence of long run relations among the variables, the study went further to estimate the GMM coefficients of the variables of the model. From Table 3, the elasticity of net migration (netMR) is recorded as -9.430 with a p-value of 0.0682, indicating a negative relationship with the human capital development in the ECOWAS region and the result is significant at the 10% level. This implies that 1% increase in net migration will result in 9.43% decrease in human capital development in the ECOWAS. This finding is consistent with the research conducted by Deming (2022), where it was observed that skilled migration can contribute to human capital development in low-income countries, provided the skilled emigration rate does not exceed a certain threshold (20–30%) of the labor force. This result aligns with the conclusions of Hu *etal.* (2009), who found, through their investigation, that negative net migration has a detrimental effect on economic development, with human capital being identified as a critical component. In another vein, the coefficient of remittances (REM) is observed to have a positive and significant relationship with human capital development in the ECOWAS, with a value of 1.360. This implies that, for every 1% increase in remittances within the ECOWAS, human capital development is expected to increase by a significant rate of 1.36%, holding all other variables constant. This finding aligns

with the results of Toyosi (2020) which revealed a positive and significant impact of remittances on human capital development and economic growth. Furthermore, the current result is consistent with the findings of Akeju and Olanipekun (2018), which established a significant impact of remittances on economic development in the ECOWAS region. The implication of this result suggests that the substantial inflow of remittances into the region significantly contributes to the improvement of regional human capital. This finding underscores the importance of remittances as a positive factor influencing human capital development in the ECOWAS area.

The coefficient for migration governance indicators (MGI) is 0.032 with a p-value of 0.002, indicating a positive and significant impact of this variable on human capital development in ECOWAS countries. This suggests that, when all other variables are held constant, 1% increase in migration governance indicators resulted into 32% increase in human capital development within the study period. The significance of this variable underscores the considerable impact that migration governance policies can exert on the relationship between migration and human capital development. This finding implies that countries with robust migration policies are likely to experience enhanced human capital development, leading to improved economic development and productivity. The significance of the migration governance indicators highlights the importance of well-designed and effectively implemented policies in fostering positive outcomes in the context of human capital development within the ECOWAS region.

The coefficient for education expenditure (EDEx) is 1.996 with a p-value value of 0.097. This result suggests that at 10% level, education expenditure had a positive and significant impact on human capital development in the ECOWAS sub-region. Specifically, 1% increase in education expenditure was found to raise human capital development by 19.9% in the ECOWAS. The significant result indicates that a sufficient allocation of funds to the education sector by the respective ECOWAS member countries actually improved human capital development. This finding aligns with the research conducted by Obialor (2017) which observed that a positive relationship existed between education expenditure and human capital development. While Obialor's study focused on Sub-Saharan African (SSA) countries, the current study concentrated on the ECOWAS sub-region. Similarly, the result is in agreement with the findings of Azuh, Ejemeyovwi, Adiat and Ayanda, Azuh (2020), where a positive and significant relationship was identified.

The coefficient for health expenditure (HTEx) is 0.054 with a p-value of 0.243, indicating a positive and statistically insignificant relationship between health expenditure and human capital development in the ECOWAS sub-region. This implies that, with the influence of all other variables held constant, a 1% increase in health expenditure, on average, led to an insignificant increase in human capital development by 54% in the region. This finding aligns with the recognized role that the health of citizens plays in human capital development, as advocated by Raghupathi & Raghupathi (2020) as well as that of Umoru and Yaqub (2013). The premise is that healthy individuals are better equipped to learn and be educated, thus contributing to overall human capital development. The positive relationship between health expenditure and human capital development underscores the importance of investing in healthcare as a crucial element in fostering human capital within the ECOWAS sub-region.

The result of the technology achievement index revealed that with a coefficient of 0.198 and a p-value of 0.176, this variable had a positive but insignificant impact on the human capital development within the ECOWAS sub-region. Thus, if the technology achievement index increases by 1%, this will lead to a reduction human capital development by 19.8%. This finding aligns with the theoretical expectations that advancements in technology facilitate various human endeavours, including the acquisition of knowledge and skills. However, the observed insignificant value indicates a potential constraint, suggesting a relatively low level of technological advancement within the region. This may be reflective of a limited acceptance of technology, particularly among the youth population.

Table 3 Results of the Generalized Moment of Moment (GMM)

Dependent Variable: HCI				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
netMR	-9.430106	6.180106	-4.525637	0.0682
REM	1.360110	1.970111	6.909025	0.0269
MGI	0.032585	0.004546	7.167791	0.0025
EDEx	1.996636	0.955768	2.089039	0.0976
HTEx	0.054841	0.167087	3.328216	0.2430
TAI	0.198389	0.146430	1.354832	0.1766
C	1.611949	0.759136	2.123401	0.0346
R-squared	0.638587	Mean dependent var		3.563590
Adjusted R-squared	0.625229	S.D. dependent var		1.397000
S.E. of regression	1.229654	Sum squared resid		430.9341
Durbin-Watson stat	1.715695	J-statistic		1.160125
Instrument rank	6			

Discussion of Findings

The objective of this study is addressed both directly through the net migration rate and indirectly through remittances. The net migration rate results indicate a negative impact on human capital development in the region. Specifically, a unit increase in the net migration rate is associated with a reduction in human capital development by 9.43 units. The continuous rise in migration rates, especially in the negative direction as observed in many ECOWAS countries, may lead to a reduction in the manpower necessary for productivity in the home countries. In the long run, this could significantly diminish human capital development, a crucial prerequisite for economic development.

Net migration also holds the potential to impact wages in sending regions and countries. For instance, the price of agricultural labour has seen a considerable increase, partly due to out-migration and the heightened demand for agricultural labour. In the case of health workers, the migration of skilled professionals is often deemed harmful to sending countries, leading to labour shortages in the health sectors of nations like Ghana, Nigeria, Kenya, Togo, and many ECOWAS countries. However, studies have shown that Africa's low health staffing levels and poor public health conditions are not solely attributed to the international movement of highly trained health professionals. Instead, factors such as unattractive working conditions in the public health sector and the failure to provide basic health services that don't require highly trained personnel contribute significantly. Labour tends to be more productive in wealthier countries, potentially enhancing the capabilities of migrants and their families to improve their livelihoods. However, the ultimate impact of migration rates, as indicated in the results, is the unavailability of skilled manpower to drive the economy of the region towards prosperity. The findings highlight the complex dynamics associated with migration, showcasing both positive effects on wages in certain sectors and regions, and negative consequences, particularly in critical sectors like healthcare.

On the other hand, there is a positive and significant impact of remittance on human capital development in the ECOWAS region. The results suggest that remittances can be targeted to foster fairer income growth and distribution. Remittances often lead to increased investments in education. Families receiving remittances are more likely to send their children to school, and they may have the means to afford better quality

education and educational resources. This can result in higher literacy rates, improved skills, and overall better educational outcomes. Remittances can also contribute to skill enhancement as individuals use the additional income for educational purposes. A more skilled workforce is likely to be more productive, leading to increased economic output and competitiveness in the global market. According to Ekanayake and Moslares (2020), remittances serve as a stable source of income for recipient families, allowing them to afford basic necessities and allocate resources toward human capital development. Studies in countries like Mexico, the Philippines, and India have shown that remittance-receiving households tend to allocate a larger portion of their income towards education (Yang, 2011).

In addition, remittances can provide individuals with the financial means to pursue entrepreneurial ventures or invest in innovative projects. This can contribute to economic diversification, job creation, and overall economic development within the ECOWAS region. In summary, the positive relationship between remittances and human capital development in the ECOWAS region implies a pathway for economic advancement, improved competitiveness, and a more inclusive and resilient economic landscape.

The positive relationship between government migration policies and human capital development suggests that carefully formulated and strategic migration policies can have a beneficial impact in the ECOWAS region. Effective migration policies can attract skilled individuals to the ECOWAS region. This influx of skilled labour contributes to a more educated and specialized workforce, which can positively impact economic productivity and innovation. The positive relationship also implies that migration policies can facilitate knowledge transfer and capacity building. Skilled migrants may engage in training and mentorship, transferring valuable skills to the local population and contributing to human capital development. Migration policies that encourage skilled individuals to move to the ECOWAS region will also contribute to diversity and cultural exchange. A diverse workforce can bring varied perspectives, creativity, and adaptability, fostering a dynamic economic environment. However, the success of migration policies in contributing to human capital development depends on the social integration and inclusion of migrants.

CONCLUSION

The study delved into the relationship between migration and human capital development in ECOWAS countries spanning the period from 1996 to 2022. Notably, the research took a distinctive approach by examining the impact of migration on the human capital index rather than relying on specific indicators for individual ECOWAS countries. Employing both descriptive and analytical methods, the research arrived at crucial conclusions, highlighting that migration constitutes a significant phenomenon predominantly influenced by robust economic and labour market dynamics. The study underscores the driving forces behind migration, emphasizing substantial differentials in wages and employment opportunities. The compelling incentives created by these factors propel individuals to undertake migration as a means to enhance their well-being and achieve better economic prospects. The role of migration in enhancing human capital development can be more appreciated by considering the fact that this study has revealed a positive impact of remittances on human capital development. It apt to state that migration results into remittances as migrants send money to their families and other relations in one form or the other. Thus, a comprehensive policy approach is needed in the ECOWAS countries to tap the opportunities arising from migration such that its positive impact will whittle down the negative impacts associated with it such as the issue of brain-drain. Consequently, the study suggests the implementation of effective migration policy within the ECOWAS region accompanied by the implementation of coordinated training programs

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