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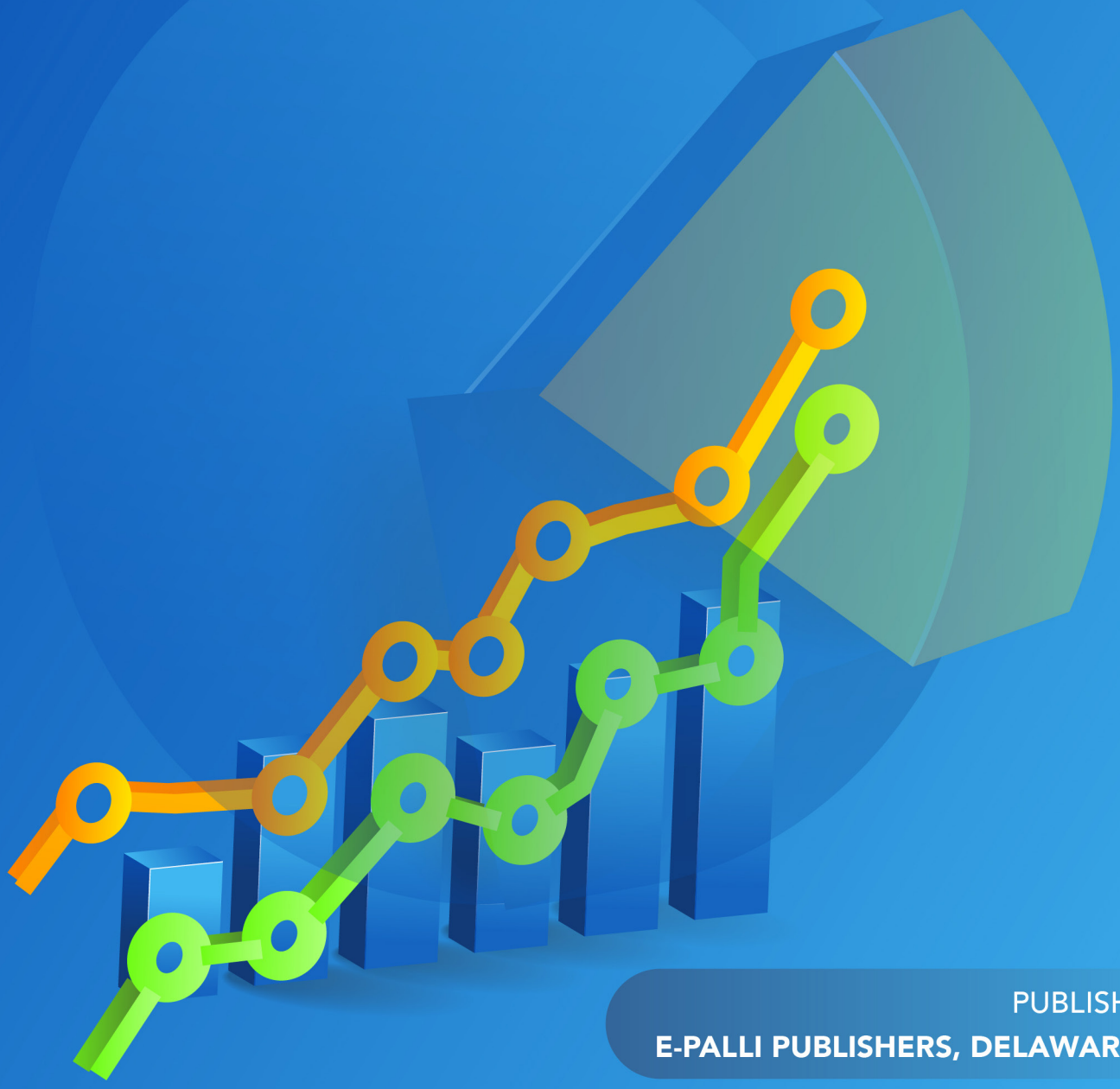

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Migration Dynamics in West Africa: The Nigeria Experience with Internet Access and Human Capital Investment

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ABSTRACT

The advent of the internet has led to increased cross-border interactions and transnational activities. Similarly, the increase in human capital investment has further given rise to digital migrants further highlighting the role of internet access in altering traditional migration dynamics. This study therefore examines the migration dynamics in West Africa using the Nigeria scenario. The dynamic OLS is used to analyze the data collected from various statistical bodies and agencies such as; the Nigeria CBN statistical bulletin as well as, the World Bank's world development indicator databases. The data collected is from the period ranging from 2008 to 2023. Findings indicates that internet access and human capital investment both contributes negatively to migration dynamics in West Africa, as it significantly fuels the widespread emigration of skilled West Africa nationals. The insights gained in this work can inform evidence-based strategies to optimize the benefits and mitigate the risks associated with complex migration phenomenon. This increase in emigration has further exacerbated brain drain and human capital flight, meaning that West Africa countries would face significant challenges to its economic development, social cohesion, and long-term prosperity if migration issues are poorly managed. It is recommended that policy makers in collaboration with relevant agencies should, invest in expanding broadband infrastructure and ensuring affordable internet services with the view to using the technology to discourage brain drain and encourage digital migrant. It is further recommended that government should promote vocational and technical training programs aligned with domestic market needs with the view to encourage brain circulation.

INTRODUCTION

Migration has served as a driving force behind cultural exchange, economic growth, demographic changes, and the spread of innovations. Migration is the movement of people from one place to another, involving a change of residence across borders or within a country, often driven by economic, social, political, or environmental factors. It encompasses various forms such as voluntary or forced migration, internal or international migration, and seasonal or permanent movement (IOM, 2022).

According to Castles and Miller (2009), it fosters cultural diversity and understanding through the exchange of traditions, languages, and customs, enriching social fabric and fostering intercultural dialogue. The UN report (2010) noted further that, migration influences population dynamics by balancing age structures and addressing labor shortages in aging societies, thus impacting social services and economic sustainability. One may conclude that, migration is a vital component of human society that shapes demographic patterns, fosters economic and cultural development, and addresses societal challenges.

The internet has revolutionized human life by serving as a global communication network that connects individuals, organizations, and governments across the world. Since its inception in the late 20th century, the internet has become an integral part of daily existence, transforming the way people communicate, learn, work, and access information. It has bridged geographical gaps, facilitated instant communication, and enabled the dissemination of knowledge on an unprecedented scale. Studies such as, Castell, (2010), noted that the Internet has made it possible for individuals to communicate instantly regardless of their physical location, fostering greater social interaction and global connectivity. Social media platforms such as, email and other messaging apps enable real-time communication, thus strengthening personal and professional relationships.

The internet has significantly enhanced migration processes in West Africa by facilitating various aspects of migration, from information access to communication and service provision. The internet provides West Africa nationals with vital information about migration opportunities abroad, including visa requirements, job openings, and educational prospects. Online platforms and social media groups often share firsthand experiences, tips, and updates, enabling prospective migrants to make informed decisions (Maqsood *et al.*, 2025). Many West Africa nationals seeking to migrate or work abroad utilize online job portals, social media, and recruitment websites. These platforms streamline the job search process and connect prospective migrants with employers or recruitment agencies, making migration more accessible and efficient (Obi-ani *et al.*, 2020).

The historical relationship between human capital and migration dynamics is a complex and evolving topic that

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has garnered significant scholarly attention. Broadly, this relationship can be understood through the lens of how the movement of people influences, and is influenced by, the distribution of skills, education, and expertise across regions and countries (Obomeghie, 2025). Migration was often driven by economic necessity, conflict, or colonization, with less emphasis on human capital considerations. However, skilled migration, such as the movement of artisans or scholars, did occur and influenced local development (Docquier & Marfouk, 2004).

With globalization and technological advancements, migration increasingly became a mechanism for the transfer of human capital. Countries with advanced economies attracted highly educated migrants, leading to what is often termed "brain drain" from developing nations and "brain gain" for developed nations (Docquier & Rapoport, 2012).

Statement of Problem

Migration dynamics in West Africa are complex and influenced by multiple factors, including economic opportunities, education, infrastructure, and technological development. Despite the growing penetration of the internet and increasing investments in human capital, there is limited understanding of how these variables specifically influence migration flows within the region. While some studies suggest that internet access facilitates access to information, social networks, and opportunities, thereby potentially influencing migration decisions (Irele & Bababunmi, 2024), others highlight the risk of brain drain and uneven development (Maharaj, 2014). Similarly, investments in human capital are believed to shape migration patterns by either encouraging skilled migration or promoting retention of talent within countries (Ozulumba *et al*., 2024). However, empirical evidence on the combined impact of internet usage and human capital development on migration in West Africa remains fragmented and underexplored.

This research deficit poses a challenge for policymakers seeking to harness technological and educational advancements to promote balanced migration and regional development. Without a comprehensive understanding of these relationships, strategies aimed at leveraging internet infrastructure and human capital investments to optimize migration flows and minimize negative consequences may be ineffective or counterproductive.

Objectives of The Study

To evaluate the influence of internet access on migration dynamics in West Africa.

To identify the role of human capital in the flow of migration in West Africa.

To provide policy recommendations for leveraging internet technologies to improve safe and informed migration in West Africa

Overall, these objectives aim to generate comprehensive empirical evidence on how internet usage impacts migration patterns, experiences, and outcomes in West Africa.

Significance of the Study

The significance of studying the impact of internet access and human capital development on migration dynamics in West Africa lies in understanding how technological advancements and educational investments influence migration patterns within the region. This research can provide valuable insights for policymakers, educators, and development agencies aiming to foster sustainable development and regional integration. Understanding the role of internet access and human capital in migration can help design targeted policies to manage migration flows, reduce brain drain, and promote regional development (Ejemeyovwi *et al*., 2019).

Insights from the study can help mitigate negative effects such as brain drain and social dislocation, while maximizing benefits of human capital mobility (Maharaj, 2014). Finally, an understanding these dynamics supports regional cooperation and development strategies aimed at balancing migration flows and promoting inclusive growth (World Bank, 2022).

LITERATURE REVIEW

Conceptual Framework

Internet access refers to the ability to connect to the internet, allowing individuals to access information, connect with others and take advantage of various opportunities in areas such as, education, healthcare business etc. (Majumder, 2019). The proliferation of internet technology has particularly significant implications for migration processes, as it facilitates the flow of information, connects migrants with their families, and provides platforms for migration-related services. Nigeria, as one of Africa's largest economies with a growing population of potential migrants, has experienced an increasing reliance on internet technology to support various aspects of migration, including information seeking, social networking, and online recruitment. According to Obomeghie and Ugbomhe, (2021), the advent of the internet has increased the spate of globalization.

In the context of migration, internet usage has been identified as a vital facilitator that enhances migrants' access to information about migration opportunities, legal requirements, and living conditions in destination countries. It also fosters social support networks that can ease the migration process and integration (Godin *et al*., 2025).

Migration is typically defined as a move that crosses a specified political boundary, such as a county, or moves into a different labor market for the purpose of establishing a new place of residence. Migration within a country is referred to as internal migration, and migration that crosses a national boundary is called immigration or emigration (Toney & Bailey, (2014).

According to IOM (2022), migration can be categorized in various ways such as:

Internal Migration

Movement within a country's borders (e.g., rural-to-urban migration, inter-state movement).

International Migration
Movement across national borders, leading to a change of country of residence.

Rural-to-Urban Migration
A common form of internal migration driven by the perceived economic opportunities and amenities in urban centers.

Chain Migration
A process where migrants are assisted in their move by family members or friends who have already settled in the destination area, often through social networks.
Migration is not just an individual decision but is heavily influenced by social and economic networks. These networks, often facilitated by modern communication technologies, provide information, financial support, and emotional sustenance to migrants, both before, during, and after their journey (Akanle *et al.*, 2020).
Human capital development refers to the process of improving the skills, knowledge, health, and overall capabilities of individuals, which enhances their productivity and potential contribution to economic growth and social well-being (Obomeghie, 2025). In the context of migration dynamics, human capital development plays a crucial role in shaping migration patterns, decisions, and outcomes within and across regions.
When individuals acquire advanced skills and education through investments in health, education, and training, they become more mobile, often seeking opportunities in regions where their skills are in demand (Elsayed *et al.*, 2025). This phenomenon can lead to brain drain, where highly skilled individuals migrate from their home countries to more developed regions, potentially resulting in a loss of human capital for the origin country (Docquier & Rapoport, 2012). In West Africa, efforts to develop human capital are intertwined with migration dynamics, as improved education and skills influence whether individuals choose to migrate, return, or stay. Human capital development can thus serve as both a driver and a consequence of migration, impacting regional economic integration, labor markets, and development trajectories (Adepoju, 2010).

Theoretical Review
Studying the impact of internet access on migration dynamics in West Africa is strongly underpinned by several theoretical frameworks. These theories help to explain why and how the internet influences migration decisions and experiences, offering a deeper understanding beyond mere observation.

Social Capital Theory
This theory posits that the internet facilitates the building and strengthening of social networks, which are critical in migration processes. Online platforms enable migrants and potential migrants to access social capital that can provide information, emotional support, and assistance during migration and integration. For example, migrants use social media to connect with family and community members, reducing uncertainties and risks associated with migration (Godin *et al.*, 2025).

Information and Communication Technologies (ICT) Diffusion Theory
This framework explains how the adoption and usage of internet technologies spread within communities, influencing migration patterns. Increased access to ICTs leads to greater information dissemination about migration opportunities, legal requirements, and living conditions, which can encourage migration or facilitate safe migration practices (Rogers, 2003).

Network Theory (and Transnationalism)
Network theory posits that migration is sustained and perpetuated through social ties connecting migrants, non-migrants, and institutions across sending and receiving areas. These migrant networks reduce the costs and risks of migration, influencing the magnitude and direction of flows (Massey *et al.,* 1993). Transnationalism, as a related concept, describes the sustained cross-border ties and activities of migrants that link their home and host countries, often enabled by technology (Vertovec, 1999). Cheap and instant communication (WhatsApp, video calls) reduces the economic and emotional costs of maintaining transnational ties, strengthening family and community bonds across borders (Dekker & Engbersen, 2014).

Human Capital Theory
This foundational theory posits that individuals invest in their own human capital through education, training, and health, to enhance their productivity and earning potential. Migration is often viewed as a response to disparities in human capital returns across regions; individuals move from areas with lower returns to those with higher opportunities, seeking better economic benefits (De Haas, 2019).

Neoclassical Economic Theory of Migration
Building on human capital theory, this perspective suggests that migration is driven by rational economic decisions aimed at maximizing income. Human capital plays a crucial role as migrants move to regions where their skills and qualifications are valued more highly, thus increasing their lifetime earnings (De Haas, 2007).

New Economics of Labor Migration (NELM)
This theory emphasizes household decision-making rather than individual rationality. It considers migration as a strategy for risk diversification, investment in human capital, and overcoming market failures. Migration can facilitate the transfer of human capital through remittances, skill development, and knowledge exchange upon return (Sako, 2002).
Skill Transfer and Brain Circulation

Recent frameworks highlight the concept of "brain circulation," where migration is not solely a loss but also a channel for skills transfer, remittances, and knowledge exchange, contributing positively to human capital development in origin countries (Clemens *et al.,* 2020).

These theories, often used in conjunction, provide a robust framework for understanding the multifaceted relationship between internet access and migration patterns. They highlight that the internet is not a neutral tool but an active agent that mediates, transforms, and complicates migration processes.

Empirical Review

Recent empirical studies have examined how internet access influences migration dynamics, including decision-making, migration flows, integration, and transnational ties. For instance, Godin *et al.* (2025) found that migrants in Nigeria extensively use social media and online forums to gather information before migrating, which influences their destination choices and preparation.

Research by Koser (2007) indicates that increased internet penetration correlates with higher migration flows, especially in regions where information barriers previously limited mobility. They observed that in Southeast Asia, the internet has facilitated chain migration by enabling migrants to maintain contact with their networks abroad, encouraging others to follow. Furthermore, empirical evidence by Ruyssen & Salomone (2017) demonstrated that migrants who actively use digital communication tools maintain stronger ties with their home countries, leading to increased remittances and sustained migration links.

Specifically, some empirical studies confirm a positive correlation between internet access/usage and migration aspirations and intentions in Nigeria. Grubanove *et al.* (2021), in a broad study that included African countries, found that having internet access is positively associated with both the desire to move abroad and preparations to migrate. Ufuophu-Biri (2020) specifically found that Nigerian youths in Edo and Delta states, highly exposed to migration information on the internet, showed a high propensity to travel abroad due to internet-driven migratory motivation.

Odulami (2025) conducted a quantitative survey in Ogun State, Nigeria, revealing that while socio-economic conditions are the primary drivers of migration, social media significantly reinforces migration aspirations by "amplifying idealized 'Japa' narratives and under-representing the complexities of return." This supports the idea that social media creates a compelling, often glamorized, image of life abroad, influencing youth's desire to emigrate. This aligns with the Social Amplification of Risk Framework, where perceived opportunities are amplified. Finally, an empirical review of the impact of internet access on migration in Nigeria reveals a complex and often contradictory picture, confirming that the internet acts as a dual-edged sword, both facilitating and complicating migration processes, although comprehensive, large-scale empirical studies specifically on Nigeria are still emerging.

Empirical research indicates that human capital development significantly influences migration patterns at both regional and international levels. Investments in education, health, and skills tend to increase individual mobility, as more educated and skilled individuals are more likely to migrate in search of better opportunities (Docquier & Rapoport, 2012).

Studies such as, Beine *et al.* (2014) have shown that higher levels of education and skills correlate positively with migration propensity. They found that countries with higher human capital levels tend to export more skilled labor, leading to brain drain but also to the potential for remittances and knowledge transfer. Equally, research by Docquier & Rapoport (2012) reveals that countries with a well-developed human capital base tend to attract migrants, especially skilled workers, contributing to regional migration flows and global talent distribution.

Research works by Maharaj (2014), noted that, the disparity in human capital levels between regions often drives migration from less developed to more developed areas, exacerbating regional inequalities . This pattern is evident in West Africa, where migration often stems from disparities in educational attainment and employment opportunities.

Research Gaps

While many studies examine internet penetration broadly, few explore how disparities in internet access across urban and rural areas influence migration decisions and human capital retention. Understanding how digital inequalities affect migration patterns remains under-explored (Irele & Bababunmi, 2024). Equally, most research provides cross-sectional analyses, lacking longitudinal studies that track how changes in internet access and human capital over time impact migration flows in West Africa. Long-term data is crucial to establish causality and observe trends (Ozulumba *et al*., 2024). In summary, the key research gaps involve the need for more nuanced, longitudinal, and country-specific studies that consider digital inequalities, informal sectors, and policy impacts, as well as the interplay between internet use and human capital in shaping migration dynamics in West Africa. Addressing these gaps can lead to more targeted and effective development strategies.

MATERIALS AND METHODS

Research Design

The research design adopted in this study is the descriptive analysis, this is in order to provide reviewers with clear, concise insights that aid in planning and operational decisions. As well, descriptive analysis allows analyst to better understand the data landscape, which is essential for accurate and effective decisions.(Umoru, *et al.,* 2023).

Method of Data Collections

Time series data is used for the study, the data were collected from the CBN statistical bulletin (2024) and the

World Bank's World Development Indicators database (2024). the data were from 2003 to 2023.

The Model of the Study

The general form of a DOLS model is:

$Y_t = \beta_\theta + \beta_1 X_1 + \sum_i = -pq\gamma i\ \Delta X_{1\ t-1} + \beta_2 X_2 + \sum_i = -pq\gamma i\ \Delta X_{2\ t-1} + \sum_j = 1k\ \delta_j \Delta Z_{jt} + \varepsilon_t)$

Where:

Y_t Migration Dynamics for Nigeria within the period of study

Xt_1 Internet access in Nigeria within the period of study.

Z_{jt} Control variables (GDP and Inflation rate) within the period of study .

$\Delta X_{1\ t-1}$ First differences of the internet usage variable, with leads (i<0) and lags (i>0). This captures dynamic effects and accounts for potential endogeneity.

$\Delta X_{2\ t-1}$ First differences of the Human capital investment, with leads (i<0) and lags (i>0). This captures dynamic effects and accounts for potential endogeneity.

The choice of p and q (number of leads and lags) is determined within the study.

ΔZ_{jt} First differences of the control variables, also with appropriate leads and lags

β_1 β_2 The long-run coefficient of interest, representing the impact of internet access and human capital investment on migration flow.

ε_t Error term.

The variables used in this study are defined below:

Migration dynamics (NMIG) = data for net migration is used to represent the difference between the number of people immigrating to Nigeria and the number of people emigrating from Nigeria within the period under review.

Internet access (ITU) = Internet access ability to connect to the internet to accomplish different tasks or activities.

Human capital index (HCI) = A measure that quantifies the human capital in Nigeria, reflecting the health, education, and skills of its population.

Economic growth (GDP) = GDP expressed in US dollars to enable international comparisons of living standards and economic prosperity.

Inflation rate (INF) = the level of inflation in Nigeria

Method of Data Analysis

The dynamic OLS estimation is used in the analysis because it extend the OLS regression by including leads and lags of the first differences of the regressors to correct for endogeneity and serial correlation (Stock & Watson, 1993; Banerjee *et al.,* 1993).

Analytical Framework

The analytical framework for the study is hypothesizes in the table 1 below;

Justification of the Chosen Method

Table 1: Hypothesized analytical framework

Variable	Expected sign	Rational
ITU	Negative (-)	Internet usage provides Nigerians with access to information about job opportunities, education, and living conditions abroad, potentially encouraging emigration (Adepoju, 2010).
HCI	Negative (-)	Increased HCI can lead to higher international emigration of skilled individuals (brain drain) if opportunities abroad are better (Adegoke, 2023).
GDP	Positive (+)	Higher GDP through improved living standards may potentially reduces the motivation for migration (Yemisi & Tosho, 2020).
INF	Positive/Negative (+/-)	Increase inflation rate may increase immigration flow because increase in the price of goods and services encourage foreign investment. It may also lead workers to find better paying jobs abroad (Ejemeyovwi, 2019).

Source: Authors compilation.

Migration flows, internet usage, human capital investment and some macroeconomic variables often exhibit non-stationary properties (trends over time). If they are cointegrated, it means they have a long-run equilibrium relationship. DOLS is designed to estimate this long-run relationship in the presence of cointegration. Equally, DOLS addresses potential endogeneity by including leads and lags of the first-differenced regressors. This accounts for the dynamic interactions and feedback effects between the variables, ensuring that the estimated coefficients represent the true long-run impact. In addition, DOLS often performs better than other cointegration techniques (like Engle-Granger or Johansen) in small samples (Stock & Watson, 1993).

RESULTS AND DISCUSSIONS

The descriptive statistics of our analysis is presented below in table 2.

From table 2 which represents the descriptive statistics, it can be seen that GDP has the highest Mean with a value of 376.9806 while NMIG has the lowest mean with a value of -5985.0021. NMIG has the highest standard deviation with a value of 52021.93 while HCI with a value of 0.028825 has the lowest standard deviation.

From table 3 which depicts the stationarity situation using the Phillip-Peron test, it can be seen that all our variables are stationary at first difference.

Table 4 shows the cointergration result which shows that there exist a long-run relationship between our dependent variable and the selected independent variables

The F- Statistics with a prbability value of 0.0000,

Table 2: Descriptive statistics

	NMIG	ITU	GDP	HCI	INF
Mean	-5985.002	18.54755	376.9806	0.502988	12.87919
Median	-11604.67	19.10000	406.5567	0.506667	12.46000
Maximum	78685.00	39.20000	574.1800	0.560000	24.66000
Minimum	-116162.0	0.560000	104.7400	0.440000	5.390000
Std. Dev.	52021.93	11.50099	117.4289	0.028825	3.706971
Skewness	-0.037921	0.125708	-0.708301	-0.235144	0.506302
Kurtosis	1.942201	1.808384	2.686781	1.823910	3.406984
Jarque-Bera	11.29376	14.89339	21.13640	16.11042	11.95965
Probability	0.003529	0.000583	0.000026	0.000317	0.002529
Sum	-1442386.	4469.960	90852.31	121.2200	3103.885
Sum Sq. Dev.	6.50E+11	31745.47	3309493.	0.199410	3297.992
Observations	241	241	241	241	241

Source; Author's computation from e-views output

Table 3: Staionarity test.

Variable	Order	PP value	Prob	Conclution
NMIG	I (I)	-4.121448	(0.0000)	Stationary
ITU	I (I)	-2.970367	(0.0392)	Stationary
GDP	I (I)	-2.607344	(0.0091)	Stationary
HCI	I (I)	-3.030018	(0.0025)	Stationary
INF	I (I)	-4.048571	(0.0001)	Stationary

Source; Author's computation from e-views output

Table 4: Cointegration test

Series: NMIG ITU GDP HCI INF				
Hypothesized		**Trace**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None *	0.148627	94.95461	69.81889	0.0002
At most 1 *	0.116584	56.98106	47.85613	0.0055
At most 2	0.078922	27.72671	29.79707	0.0851
At most 3	0.034131	8.325125	15.49471	0.4313
At most 4	0.000549	0.129591	3.841466	0.7189
Hypothesized		**Max-Eigen**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None *	0.148627	37.97354	33.87687	0.0153
At most 1 *	0.116584	29.25435	27.58434	0.0303
At most 2	0.078922	19.40159	21.13162	0.0858
At most 3	0.034131	8.195534	14.26460	0.3592
At most 4	0.000549	0.129591	3.841466	0.7189

Source; Author's computation from e-views output

Table 5: Staionarity test.

Wald Test:			
F-statistic	9.733709	(3, 222)	0.0000
Chi-square	29.20113	3	0.0000

Source; Author's computation from e-views output

indicates that the over-all fit of the model is adequate. From table 6, it can be noticed that there is a significant but negative relationship between internet access and migration dynamics as the p-value of 0.0001 is less than 0.05 which indicates that for every one-unit increase in ITU, migration is estimated to decrease by -4799.270

Table 6: the Dynamic OLS estimates

Dependent Variable: NMIG				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
ITU	-4799.270	512.3348	-9.367450	0.0000
GDP	341.1918	53.03061	6.433866	0.0000
HCI	-290251.7	48553.14	-5.978021	0.0000
INF	6906.044	1183.578	5.834889	0.0000
D(ITU)	-4670.782	231325.0	-0.020191	0.9839
D(ITU(1))	84103.74	167561.9	0.501926	0.6162
D(ITU(-1))	-19552.96	169485.2	-0.115367	0.9083
D(GDP)	-218.8061	2958.983	-0.073946	0.9411
D(GDP(1))	5575.992	2167.413	2.572648	0.0107
D(GDP(-1))	-3729.752	2149.571	-1.735115	0.0841
D(HCI)	-32439.78	3334979.	-0.009727	0.9922
D(HCI(1))	3186840.	2453895.	1.298686	0.1954
D(HCI(-1))	-1227553.	2465193.	-0.497954	0.6190
D(INF)	-749.3552	30704.40	-0.024405	0.9806
D(INF(1))	-9079.442	22817.58	-0.397914	0.6911
D(INF(-1))	1087.682	23185.19	0.046913	0.9626
R-squared	0.430137			
Adjusted R-squared	0.391632			

Source; Author's computation from e-views output

units, holding other variables constant. This is in line with our a priori expectation similar to the study by Brynjolfsson *et al.* (2020).

In the case of human capital investment, it can be seen that there is a negative relationship between HCI and migration dynamics, the p-value of 0.0001 is less than 0.05 which indicates that for every one-unit increase in HCI migration is estimated to decrease by -29025.7 units, holding other variables constant. This is in line with our a priori expectation (Adegoke, 2023).

For GDP, it can be observed that there is a positive relationship between GDP and migration dynamics the p-value of 0.0001 is less than 0.05 which indicates that for every one-unit increase in GDP, migration is estimated to increase by 341.1918 units, holding other variables constant. This is in line with our a priori expectation and supported by similar study by Adepoju (2016).

Finally, it can be observed that there is a positive relationship between inflation rate and migration dynamics, the p-value of 0.0001 is less than 0.05 which indicates that for every one-unit increase in INF, migration is estimated to increase by 6906.044 units, holding other variables constant. This is in line with our a priori expectation and supported by similar study by Ekhorugue *et al.* (2024).

CONCLUSION

A negative relationship between internet access and migration dynamics suggests that as internet access increases, emigration increases. This means that enhanced internet access provides residents with better access to foreign education, job information, government services, and social networks. This can increase desire to migrate elsewhere, leading to decreased net migration (Goolsbee & Syverson, 2008). This trend suggests that better connectivity increases outward migration by supporting telecommuting.

On the other hand, a negative relationship between human capital investment and migration dynamics suggests that enhancing human capital through education, skills development, and health can encourage emigration. Better education and skills can boost employment prospects internationally, which can lead to "brain drain." According to Umeokwobi *et al.* (2025), West Africa has historically experienced significant out-migration of skilled health workers, engineers, and academics seeking better opportunities abroad.

A positive relationship between GDP and migration dynamics suggests that as GDP increases, more foreigners move into the country. Higher GDP levels, often driven by economic growth, can make the country more attractive to migrants seeking better opportunities.

Finally, a positive relationship between inflation rate and migration dynamics suggests that higher inflation rates are associated with increased immigration because rising inflation encourage investors to migrate and invest in the country.

Reccommendations

Arising from the outcome of this study, it is recommended that policy makers in collaboration with relevant agencies

should invest in expanding broadband infrastructure and ensuring affordable internet services with the view to using the technology to discourage brain drain and encourage digital migrant. Policies aimed at expanding digital connectivity and leveraging the internet access for economic and social development should be encouraged. With respect to human capital investment, it is recommended that policy makers should promote vocational and technical training programs aligned with market needs with the view to encourage brain circulation. Encourage public-private partnerships to improve skill acquisition, implement policies that ensure competitive salaries and benefits for skilled workers. As well as, offer incentives for expatriates to return or contribute remotely and promote diaspora engagement programs.

In the case of GDP, it is recommended that policy makers in the sub-region should make favorable policies and incentives to attract foreign investors and skilled expatriates. Promote the region as a destination for business, innovation, and entrepreneurship through international marketing campaigns. Simplify business registration and improve ease of business to sustain economic growth and migration inflows.

Finally, policy makers in the sub-region should plan policies that will help to channel investment influx into productive sectors, facilitate entry and operation of businesses that can benefit from inflationary environments, such as real estate, as well as develop targeted policies to protect vulnerable populations from inflationary impacts and prevent undesirable outflows.

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