ANALYZING THE BRAIN DRAIN IN SUB-SAHARAN AFRICA

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This paper examines the phenomenon of the brain drain in sub-Saharan Africa through economic, historical, and theoretical lenses, highlighting its relationship to globalization and global inequality. It traces how colonial legacies, underdevelopment, and limited educational infrastructure have made many African nations particularly vulnerable to the emigration of skilled professionals. Using Everett Lee's push-pull theory, the paper analyzes the motivations driving highly educated individuals to seek opportunities abroad and the subsequent economic, social, and health-related consequences for their countries of origin. The discussion incorporates neoliberal, nationalist, and globalization frameworks to assess divergent interpretations of the brain drain and its implications for sovereignty, development, and labor markets. Case studies from Ghana, Zimbabwe, and Nigeria illustrate how these dynamics operate in practice. The paper concludes that mitigating the brain drain requires coordinated domestic and international action such as strengthening higher education systems, improving labor conditions, and fostering equitable global cooperation to prevent the continued outflow of skilled talent from the region.

I. Introduction

Migration has always played a significant role in human history, but the patterns of movement and their consequences have changed over time. When people move, especially across borders, they bring their money, talents, and labor—leading to widespread material impacts that extend beyond individuals and families. The "brain drain," a term first coined by a British newspaper in 1963, refers to "the transfer of human knowledge, experience, skill, and expertise from one area, region, country, or geographic location to another."[1] Originally, the phrase was used to describe the migration of scientists from the United Kingdom and other European countries to the United States. In the decades since, the phrase has become primarily associated with the exodus of highly trained professionals, especially those with tertiary degrees, from the global south to the global north.[2] The brain drain is one of many effects of the growing economic, political, and social interconnections between various parts of the world—a phenomenon known as globalization. In the era of nation-states, taxes, and citizenship, skilled migration is a critical political issue. Multiple frameworks, including neoliberalism, nationalism, and globalization can be used to analyze the complexities of the brain drain and offer diverse potential solutions. Yet, resolving this issue requires collaborative efforts between sending and receiving nations.

The brain drain occurs in nearly all regions of the world in some capacity, but sub-Saharan Africa is particularly affected. European colonialism in Africa left much of the continent underdeveloped, unstable, and dependent on foreign capital, making it difficult to

[1] G.J. Sefa Dei and A. Asgharzadeh, "What Is to Be Done? A Look at Some Causes and Consequences of the African Brain Drain," *African Issues* 30, no. 1 (2002): 31-36, https://doi.org/10.2307/1167087
[2] Sefa Dei and Asgharzadeh, "What Is to Be Done?" *African Issues* 30, no. 1 (2002): 31-36, https://doi.org/10.2307/1167087

establish robust higher education institutions.[3] The ten most populous African countries have a combined ratio of 740 universities to 660 million people, while the United States has about 5,300 universities for half that population.[4] This causes a systemic shortage of highly educated citizens, creating challenges in finding university research and education staff. The issue is compounded when many students who do successfully graduate from college choose to leave the region entirely. This trend started soon after decolonization, as post-independence patriotism gave way to disillusionment with poverty, violence, and high unemployment.[5] By the mid-1980s, Africa had lost about one-third of its skilled workers, primarily to wealthier regions.[6] Currently, about 85% of the sub-Saharan African diaspora is in countries that are a part of the Organization for Economic Cooperation and Development (OECD), with the United States, France, and the United Kingdom collectively accounting for 50% of all sub-Saharan migrants. The reasons for this mass emigration of the educated class are complex and vary across regions.[7]

II. Causes and Impact

In 1966, scholar Everett Lee used the terms “push factors” and “pull factors" to explain his theory of migration.[8] Push factors are unfavorable conditions that drive people away from their home countries, and pull factors are favorable conditions that draw them to foreign countries. The primary motivation for migration is economic opportunity, which acts as both a push and a pull factor. Wealthier countries in the global north offer far greater opportunities and

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[3] Sefa Dei and Asgharzadeh, "What Is to Be Done?" *African Issues* 30, no. 1 (2002): 31-36, https://doi.org/10.2307/1167087

[4] "The Struggle to Find High-Quality Education in Africa," *University of the People*, accessed December 2, 2025, https://www.uopeople.edu/blog/the-struggle-to-find-high-quality-education-in-africa/

[5] Luc Ngwé, "African Brain Drain: Is There an Alternative?" *UNESCO Courier*, January 24, 2018, updated January 31, 2025, https://courier.unesco.org/en/articles/african-brain-drain-there-alternative

[6] Abel Chikanda, "Medical Migration from Zimbabwe: Magnitude, Causes and Impact on the Poor," *Development Southern Africa* 24, no. 1 (2007): 47-60, https://doi.org/10.1080/03768350601165850

[7] Jesus Gonzalez-Garcia and Montfort Mlachila, “A Sea Change: The New Migration from sub-Saharan Africa,” *IMF Blog*, November 2, 2016, https://www.imf.org/en/blogs/articles/2016/11/02/a-sea-change-the-new-migration-from-sub-saharan-africa

[8] Everett S. Lee, “A Theory of Migration,” *Demography* 3, no. 1 (1966): 47–57, https://doi.org/10.2307/2060063

earning potential for highly educated professionals than most countries in the global south.[9] For example, the average doctor in Kenya earns about $256.20 USD monthly, which is forty times less than what they would make in the United States.[10] The higher salary, combined with better working conditions and opportunities for advancement, presents an alluring path for migrants.

This was demonstrated in a 2015 study conducted in Ghana that surveyed youth about their interest in migrating.[11] The researchers found that the lack of job opportunities and poor living conditions were cited as the main reasons for choosing to leave. In Ghana, the connection between higher education and employment prospects is weak, and the high unemployment rate drives many students to look elsewhere. The perception of working in Ghana is so negative that a student with no previous travel experience stated, "In Ghana, even people who are employed earn salaries that are far lower compared to countries like Canada and USA. When I travel to Canada, I can relax and enjoy recreational activities and have fun after a hard day's work . . . in Ghana, the cost of living is high so people cannot have fun."[12] Despite having never left Ghana, this student had strong convictions about how life would be better abroad. The difference in socioeconomic conditions between sub-Saharan African countries and highly developed ones like the United States is so significant that it acts as a powerful pull factor. For example, another student in the study of Ghanaian youth noted that when she stayed in the United States, she "did a home care job and earned $50 per day without paying for food or accommodation. In Ghana, even professional nurses do not receive that much income."[13] Beyond the employment benefits,

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[9] Sefa Dei and Asgharzadeh, "What Is to Be Done?" *African Issues* 30, no. 1 (2002): 31-36, https://doi.org/10.2307/1167087

[10] D. E. Agbiboa, "Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances," *Third World Quarterly* 33, no. 9 (2012): 1669–1683, https://doi.org/10.1080/01436597.2012.720847

[11] M. Dako-Gyeke, "Exploring the Migration Intentions of Ghanaian Youth: A Qualitative Study," *International Migration & Integration* 17 (2016): 723–744, https://doi.org/10.1007/s12134-015-0435-z

[12] Dako-Gyeke, *Exploring the Migration Intentions of Ghanaian Youth*, 723–744, https://doi.org/10.1007/s12134-015-0435-z

[13] Dako-Gyeke, *Exploring the Migration Intentions of Ghanaian Youth*, 723–744, https://doi.org/10.1007/s12134-015-0435-z

the infrastructure, healthcare systems, and education in these countries make them extremely appealing for migrants, especially those with children. Finally, the prevalence of Western—especially American—culture worldwide even acts as its own pull factor, as multiple students in the Ghanaian youth study cited movies and television shows as inspirations for their choice to move to the United States.[14]

The economic impact of the brain drain on sending countries is significant, though whether this impact is beneficial or harmful is heavily debated. At its core, migration leads to a transfer of human and financial capital. People who are educated by African institutions with African funding then spend the money abroad and serve foreign citizens and governments without contributing tax money to their home countries.[15] This widens the already large gap between the global north and south as top scientists, engineers, doctors, and educators in sub-Saharan Africa leave for more developed nations such as the United States, the United Kingdom, and Canada. Those countries benefit greatly from the migration because many of them are faced with an aging population, which means that recruiting labor from the more youthful sub-Saharan African countries is a cheaper way of filling their vacancies.[16] But for those African countries, this can cause a problematic cycle; instability and underdevelopment push the highly educated out, reinforcing those issues and preventing the development of a solid middle class.[17] Another consequence is the loss of innovative ideas and research that could improve the sending

[14] Dako-Gyeke, *Exploring the Migration Intentions of Ghanaian Youth*, 723–744, https://doi.org/10.1007/s12134-015-0435-z.
[15] Sefa Dei and Asgharzadeh, "What Is to Be Done?" *African Issues* 30, no. 1 (2002): 31-36, https://doi.org/10.2307/1167087
[16] Sefa Dei and Asgharzadeh, "What Is to Be Done?" *African Issues* 30, no. 1 (2002): 31-36, https://doi.org/10.2307/1167087
[17] Sefa Dei and Asgharzadeh, "What Is to Be Done?" *African Issues* 30, no. 1 (2002): 31-36, https://doi.org/10.2307/1167087

countries' technological abilities, though some argue that the lack of adequate equipment or infrastructure is a bigger obstacle than skilled emigration.[18]

The healthcare industry, in particular, suffers from the exodus of trained medical officers. For example, between 1995 and 2002, 64.9% of medical officers in Ghana migrated abroad.[19] Studies have also found that over half of Ghanaian-educated doctors work outside of Ghana. While this has saved the United Kingdom over 65 million pounds in education costs, the infant mortality rate, maternal mortality rate, and nurse-to-patient ratio have substantially worsened in Ghana, and the doctor-patient ratio there is 1 to 16,000, compared to a 1 to 430 ratio in the United States.[20] Doctors are especially challenging to replace.The health systems in many sub-Saharan countries continue to suffer as they leave, increasing the workload and burnout rates of those left behind. It is estimated that Zimbabwe also loses about 20% of its healthcare workers annually, which has made it extremely difficult for the country to handle the HIV/AIDS crisis.[21] This issue is compounded by the fact that HIV is a leading cause of death and absenteeism among healthcare workers. Although Africa bears 24% of the global disease burden, it has only 2% of the global supply of doctors,[22] and it is home to 36/57 of the countries with the greatest healthcare shortage.[23] Replacing these workers is no easy task; Africa as a whole spends an estimated 4 billion dollars recruiting more expensive expats to replace locals, often on

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[18] Organisation for Economic Co-operation and Development, *The Brain Drain and Negative Social Effects: When is the Home Country Hurt?* in *Policy Coherence for Development 2007: Migration and Developing Countries* (2008): 65-78, https://doi.org/10.1787/9789264026100-en.

[19] OECD, *The Brain Drain and Negative Social Effects*, in *Policy Coherence for Development 2007: Migration and Developing Countries* (2008), 65-78, https://doi.org/10.1787/9789264026100-en

[20] Daniel Egiegba Agbiboa, "Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances," *Third World Quarterly* 33, no. 9 (October 2012): 1669–1683, https://doi.org/10.1080/01436597.2012.720847

[21] Chikanda, "Medical Migration from Zimbabwe," 47–60, https://doi.org/10.1080/03768350601165850

[22] Edward J. Mills et al., "The Financial Cost of Doctors Emigrating from Sub-Saharan Africa: Human Capital Analysis," *BMJ* 343 (2011): d7031, https://doi.org/10.1136/bmj.d7031

[23] Agbiboa, "Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances," https://doi.org/10.1080/01436597.2012.720847

limited-term contracts.[24] Some experts argue that due to these trends, brain drain is a solely harmful phenomenon. However, the flow of capital is not unidirectional, and remittances play a significant counterbalancing role.

III. Remittances and Structural Effects

Remittances are funds migrants send back to their families in their home countries. In 2010, remittances to Africa added up to 440 billion dollars, excluding informal exchanges.[25] Remittances enormously help many low-income families, who use the funds to educate other children and increase their quality of life. This flow of money also provides a substantial economic benefit for sending countries, to the point that some are reliant on it. For example, 26% of Liberia's GDP and 35% of Somalia's GDP are from remittances.[26] Some analysts claim that remittances effectively offset the losses from brain drain and further argue that skilled migration is not a significant problem for developing countries. However, this argument overlooks that while remittances may help individual families and communities, they cannot fully address the structural problems exacerbated by the brain drain. Remittances cannot provide more doctors, adopt new technologies, or educate students. The skills and knowledge of a person who leaves their home country cannot be entirely replaced by the money they send back. Nonetheless, their family's reliance on that money provides a strong motivation to migrate.

In many sub-Saharan African countries, such as Senegal, families or even entire villages will sponsor one of their most capable young men's education and migration to receive remittances that support the community. These planned migration efforts are called risk-spreading livelihood strategies. They are often considered to be an alternative to the

[24] Chikanda, "Medical Migration from Zimbabwe," 47–60, https://doi.org/10.1080/03768350601165850
[25] Agbiboa, "Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances," https://doi.org/10.1080/01436597.2012.720847
[26] Agbiboa, "Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances," https://doi.org/10.1080/01436597.2012.720847

insurance and credit programs used in industrialized countries because remittances tend to be stable sources of income.[27] These strategies were first explained by economists Oded Stark and David Bloom in their New Economics of Labor Migration theory. They note that the decision to migrate is often made at the family level rather than by an individual since both the costs and benefits are shared within the household.[28] One result of this strategy is that the brain drain is often a gendered phenomenon, in which husbands, sons, and fathers have greater labor mobility and are therefore given access to more opportunities abroad than women. This is not universal, as many women also migrate abroad; women, however, are more likely to do so for low-skilled care work.[29] The effect this has on community roles at home is complex and varies based on cultural differences. In some places, the money provided allows children to stay in school longer and enables the women left behind to become more independent and active in the community. However, the children are also more likely to be raised in single-parent households, and sometimes, women are forced to take on a greater burden by both working and taking care of their family alone.[30] Another result of this strategy is that these patterns of migration create social networks. Immigration by one person establishes a path for later bringing other family members over as well. Social networks are extremely important for choosing destination countries because they can "reduce the costs and risks of movement, enhance the potential for future income, and increase the expected net returns to migration."[31] In the United States, ¾ of migrants are relatives

[27] Agbiboa, "Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances," https://doi.org/10.1080/01436597.2012.720847

[28] Oded Stark and David E. Bloom, "The New Economics of Labor Migration," *The American Economic Review* 75, no. 2 (1985): 173–78, http://www.jstor.org/stable/1805591

[29] Stark and Bloom, "The New Economics of Labor Migration," 173–78.

[30] OECD, *The Brain Drain and Negative Social Effects*, in *Policy Coherence for Development 2007: Migration and Developing Countries* (2008), 65-78, https://doi.org/10.1787/9789264026100-en

[31] M. Dako-Gyeke, "Exploring the Migration Intentions of Ghanaian Youth: A Qualitative Study," *International Migration & Integration* 17 (2016): 723–744, https://doi.org/10.1007/s12134-015-0435-z

of previous migrants, and a similar pattern exists in many other developed countries.[32] In essence, migration operates as a self-perpetuating cycle where the emigration of one individual serves as a catalyst for others, creating pockets of entire migrant communities in developed countries and continuing the effects of the brain drain.

IV. Differing Theories on Potential Solution

Analyzing the brain drain through the lenses of neoliberalism, nationalism, and globalization offers different understandings of the issue and different ideas about how to "solve" it. Those who subscribe to the neoliberal, international, or cosmopolitan approach prefer to view the brain drain as a "brain bank."[33] They argue that it is nothing more than the mutual exchange of labor and capital; people will go wherever they can receive the greatest return for their services.[34] This lens focuses on the fact that migrants usually choose to move and that it is inherently positive because their choice is voluntary. It also characterizes the brain drain as an inevitable consequence of globalization rather than something preventable.[35] However, this perspective ignores the structural and institutional factors that drive people to migrate and largely overlooks the social and economic costs of migration. These shortcomings lead some to turn to the nationalist approach, which labels the brain drain as a form of exploitation by wealthier countries.

People who use the nationalist lens argue that each nation should be able to use its own human capital, and the recruitment of skilled migrants from the global south by the global north reflects neo-colonialism and the declining terms of trade between the two regions.[36]

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[32] Agbiboa, "Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances," https://doi.org/10.1080/01436597.2012.720847

[33] Esi E. Ansah, "Theorizing the Brain Drain," *African Issues* 30, no. 1 (2002): 21–24, https://doi.org/10.2307/1167085

[34] Dako-Gyeke, "Exploring the Migration Intentions of Ghanaian Youth," 723–744.

[35] Ansah, "Theorizing the Brain Drain," 21–24

[36] Ansah, "Theorizing the Brain Drain," 21–24

Neo-Marxists often fall into this category. They point to the historic socio-economic differences between core and peripheral countries and see the brain drain as an example of lasting unequal relationships. A point that they often emphasize is the idea of "brain waste," where professional degrees from developing countries are not consistently recognized by developed countries, forcing people who move to take lower-skilled jobs than what they were educated for.[37] Nationalists argue that the brain waste is an example of Western countries purposely devaluing degrees and experience from non-Western nations. While this perspective can be a useful way to deconstruct colonialist mindsets, it is highly structuralist, and it neglects the importance of personal agency and freedom of movement. In Ghana, the students who stay in the country are often exploited by employers who pay far below the value of their degree because unemployment is so high.[38] For Ghanaian youth, leaving is not succumbing to exploitation; it is the best way to prevent it. The nationalist view also fails to recognize that brain drain occurs not only between countries but also within them; almost universally, people from rural or less developed areas move to places with greater economic opportunity, which complicates the claim that the brain drain is solely exploitative.

A third approach combines neoliberal and nationalist theories into a more nuanced globalization view. The globalization view recognizes the benefits and drawbacks of the brain drain for different actors, and it seeks to evaluate how circumstances can shift the net effect of skilled migration. It also considers the relationships between global inequality, market liberalization, instability, and migration.[39] This lens is compelling because the brain drain, along with its causes and effects, is inherently intertwined with globalization and its transformative

[37] Frédéric Docquier and Hillel Rapoport, *Globalization, Brain Drain and Development*, IZA Discussion Paper No. 5590 (March 2011), https://docs.iza.org/dp5590.pdf
[38] Dako-Gyeke, "Exploring the Migration Intentions of Ghanaian Youth," 723–744.
[39] Ansah, "Theorizing the Brain Drain," 21–24

influence on the world. One of the primary functions of states is controlling movement, and some point to skilled migration as evidence of states losing control over the global flow of people. There is some truth to this view, as the brain drain moves talent and money across borders in a way that can undermine state stability.

However, analyses of the brain drain in the context of globalization sometimes ignore that as flows of people grow, so do the barriers to those flows. A simple fact that is often minimized is that migration is not easy. It is expensive, restricted heavily by destination states, and psychologically complex. Furthermore, like many other aspects of globalization, it does not affect people or states equally. Thus, a comprehensive examination of the brain drain must also evaluate the international context that drives the push and pull factors previously mentioned. Weak economies with poor living conditions and limited opportunities do not exist in a vacuum, and the plight of many sub-Saharan African countries can be traced back to policies imposed by the International Monetary Fund (IMF) through structural adjustment plans (SAPs).[40] For example, Zimbabwe's standard of living fell sharply after the implementation of SAPs, likely exacerbating their systemic healthcare issues that still drive each of the major hospitals to lose twenty-four senior nurses and three doctors monthly.[41] The involvement of organizations like the IMF also forcibly exposed many of these countries to the international market, allowing transnational corporations (TNCs) to recruit local talent to move abroad.[42] The World Bank played its own role in imposing on African economies by forcing drastic university budget cuts in the 1980s and 1990s. In 1986, some members of the bank argued that "Africa has no need for universities," preferring that African governments allocate more public spending towards paying

[40] Sefa Dei and Asgharzadeh, "What Is to Be Done?" *African Issues* 30, no. 1 (2002): 31-36, https://doi.org/10.2307/1167087
[41] Chikanda, "Medical Migration from Zimbabwe," 47–60, https://doi.org/10.1080/03768350601165850
[42] Silvia Federici, "African Roots of US University Struggles," *Transversal Texts*, January 1989, https://transversal.at/transversal/0112/federici/en

off foreign debts and financing primary education.[43] They insisted that students who were motivated enough could privately fund their tertiary education, seemingly ignoring that the vast majority of the population in many African countries would not be able to afford it, especially after the implementation of structural adjustment.[44] While the economic and political conditions of sub-Saharan African countries are the primary drivers of high-skilled migration, the role of international agents in forming those conditions highlights how globalization has contributed to the brain drain. Given that globalization does not appear to be decreasing in the near future, countries in sub-Saharan Africa are faced with the necessity of confronting their fleeing skilled labor.

Addressing the brain drain and alleviating the problems it causes are very complex tasks, in part because there is debate over who is responsible for doing so. Some, such as economist Jagdish Bhagwati, argue that professionals who emigrate ought to pay an extra tax to their home government to compensate for the loss of skills. His appeal is both financial and ethical, as he explains that emigrants should have a moral obligation to help those who did not have the same economic opportunities.[45] Others, especially nationalists, insist that developed nations themselves have a responsibility to help mitigate the effects of the brain drain.[46] After all, the data indicates that developed countries benefit greatly from the brain drain at the expense of developing countries to the point that they are often described as "poaching" talent.[47] However, in most cases, it is developing country governments that are expected to address the issue, given that their citizens are the ones experiencing the harmful effects.

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[43] Federici, "African Roots of US University Struggles," *Transversal Texts*, January 1989.
[44] Federici, "African Roots of US University Struggles," *Transversal Texts*, January 1989.
[45] Jagdish N. Bhagwati, "Taxing the Brain Drain," *Challenge* 19, no. 3 (1976): 34–38, http://www.jstor.org/stable/40719435
[46] Docquier and Rapoport, *Globalization, Brain Drain and Development*, IZA Discussion Paper No. 5590.
[47] Docquier and Rapoport, *Globalization, Brain Drain and Development*, IZA Discussion Paper No. 5590.

There are a few general strategies that are often proposed to address the problem, including incentivizing people to return from abroad, creating more favorable conditions to prevent people from leaving, and determining ways for sending countries to still benefit from talent abroad. Given that the brain drain is a global phenomenon, many countries have already attempted to address it. In 2008, China launched "The Thousand Talents Plan," which was designed to attract Chinese scholars with expertise in science, technology, and entrepreneurship who were living abroad. They offered permanent and short-term contracts with significant benefits to encourage expatriates to return to China.[48] India also created programs better to connect members of their diaspora to Indian culture and offered educational scholarships for foreign nationals of Indian origin.[49] These examples are government-sponsored actions that sub-Saharan African countries could use to persuade their expatriates to return. South Korea also successfully "lured" back 75% of its US-educated nationals with doctorates in science and engineering by transforming workplace culture to be more appealing.[50] Some reforms included implementing a "robust reward system, opportunities for advancement, availability of public resources, and a merit-based culture with reduced corruption and nepotism."[51]

However, while these initiatives were effective there, South Korea has the advantage of being a highly developed country with economic opportunities that rival the West. Sub-Saharan Africa would require more systemic changes not just to the workplace, but also to the economic and political conditions of the countries overall. A clear problem with using similar programs to

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[48] Abdoulaye Gueye, "From Brain Drain to Brain Gain: Countries Engaging Their Diasporas," AWS, accessed December 1, 2023, https://production-carnegie.s3.amazonaws.com/filer_public/e9/77/e9770ee4-f63c-423e-8876-edbe7a8f5c01/african_diaspora_forum_2019_gueye.pdf

[49] Gueye, "From Brain Drain to Brain Gain," AWS, accessed December 1, 2023.

[50] Agbiboa, "Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances," https://doi.org/10.1080/01436597.2012.720847

[51] Agbiboa, "Offsetting the Development Costs? Brain Drain and the Role of Training and Remittances," https://doi.org/10.1080/01436597.2012.720847

those used in India, China, and South Korea is that they require the allocation of funds for incentives—funds that less developed countries may not have. For example, Zhengzhou University in China offers $85,000 as a starting salary for STEM professors, and the South China University of Technology promises over $800,000 in research grants.[52] When the financial compensation is comparable to or even greater than the equivalent position in the United States, it is much easier for a country to convince people to return. Other incentives that could be more feasible for lower-income countries include promotions, exemptions from certain tax laws, and special services for children and families. However, the reality is that these programs on their own may not be enough. Once expatriates emigrate to more prosperous countries, the vast majority of them prefer to stay, and the amount of resources required to attract someone who is accustomed to Western compensation may be too great.[53] Therefore, it may be more worthwhile for sub-Saharan African countries to focus on retaining the talent they currently have.

V. Conclusion

In order to persuade skilled workers to remain, African governments must address underdevelopment, political and economic instability, and lack of opportunity across many different sectors. They also must invest heavily in university education and support. While it may be difficult for African countries to establish strong research institutions on their own, multiple countries could pool their resources to create several institutions dedicated to different fields, as francophone African countries did in the 1970s and 1990s.[54] However, a limitation of this strategy is that it requires international cooperation and stability, which may not always be feasible.[55] Economic approaches are usually the central focus of policymakers, but symbolic

[52] Gueye, "From Brain Drain to Brain Gain," AWS, accessed December 1, 2023.
[53] Gueye, "From Brain Drain to Brain Gain," AWS, accessed December 1, 2023.
[54] Gueye, "From Brain Drain to Brain Gain," AWS, accessed December 1, 2023.
[55] Gueye, "From Brain Drain to Brain Gain," AWS, accessed December 1, 2023.

measures could be a useful supplement. An aspect that nationalists emphasize is African pride, as they believe that if people are taught to value African culture, they will be more motivated to contribute to African society.[56] This critique reflects the argument that brain drain upholds colonial hierarchies in which the West is idealized as a site for opportunity and modernity, encouraging migrants to leave rather than investing in their home countries.[57] However, it is unclear how much of an impact cultural approaches like this would have without the necessary improvements in development.

A major challenge for these countries is attracting investment for economic development without sacrificing the welfare of the people. In order to persuade TNCs to invest, many governments engage in a "race to the bottom" by establishing lower wages and restrictive labor laws. However, this practice prevents quality of life improvements that could improve retention of educated labor.[58] The importance of labor rights and support cannot be overstated. A case study of the University of Calabar in Nigeria found that policies such as "addressing pay and terms and conditions differentials, workers' rights and strengthening the power of collective representation and bargaining through strengthening trades unions" are essential for retaining staff. The study also supports "investing in research and teaching, infrastructure, expanding and promoting academic freedom."[59] These policies could improve job satisfaction for academics and incentivize them to stay and educate the youth in their home country. But even if sub-Saharan

[56] Ansah, "Theorizing the Brain Drain," 21–24
[57] Sefa Dei and Asgharzadeh, "What Is to Be Done?" *African Issues* 30, no. 1 (2002): 31-36, https://doi.org/10.2307/1167087
[58] Rob Clark and Roy Kwon, "Taking Stock of Flow: Revisiting the Link between FDI and Human Rights," *Social Development* 4, no. 4 (2018): 346, https://online.ucpress.edu/socdev/article-abstract/4/4/346/83403/Taking-Stock-of-FlowRevisiting-the-Link-between
[59] Anokye, Okri, and Adie, "Retention and Brain Drain of Academic Staff in Higher Institutions in Nigeria: A Case Study of University of Calabar."

countries retain more personnel, without the accompanying infrastructure, such as proper equipment, associations, autonomy, and political freedom, the benefit will be limited.[60]

Considering the difficulty of bringing skilled labor back and retaining it, some have instead proposed a kind of knowledge sharing that would preclude the necessity of professionals like scientists and engineers being physically present in their home country. This solution proposes new communication channels through the diaspora and rejects the nationalist system entirely, envisioning a global "brain bank" where advances in technology and science benefit everyone.[61] It also appeals to neoliberals who claim that "the concentration of human capital in the most advanced economies can stimulate technological progress across the world and trickle down to the less advanced economies."[62] Theoretically, developing countries could benefit from their most talented having access to the best resources, though in practice, this is not always the case. People who see globalization as a process that unilaterally entails the decline of states and an increase in "weightlessness" are likely to support this solution. However, even though knowledge may not be tied to a nation, employment, income, and taxes are, which means state sovereignty remains important. Considering the role of wealthy states in recruiting talent, many argue they should pay a form of compensation to the developing countries the professionals are coming from.[63] Currently, states such as Canada, the United States, the United Kingdom, and Australia offer varying forms of support to many African nations, but further research would be needed to determine how this aid measures up to the losses incurred by African financial investments in education that is used abroad.[64] Increased global communication and cooperation could alleviate some of the deficiencies created by the brain drain, but the competitive nature of

[60] Ansah, "Theorizing the Brain Drain," 21–24
[61] Ansah, "Theorizing the Brain Drain," 21–24
[62] Docquier and Rapoport, *Globalization, Brain Drain and Development*, IZA Discussion Paper No. 5590.
[63] Docquier and Rapoport, *Globalization, Brain Drain and Development*, IZA Discussion Paper No. 5590.
[64] Mills et al., "The Financial Cost of Doctors Emigrating from Sub-Saharan Africa: Human Capital Analysis."

scientific and technological advancements may prevent countries from committing to it. Therefore, retaining skilled workers is still imperative for developing nations. Due to their reliance on remittances, not all states prioritize reducing the brain drain. But unless they invest significant time and resources into preventing the exodus of talent from their borders, the problems of development, disease, and inequality will continue to grow as the people educated enough to solve them leave.

Even though there is no consensus on the framework for studying brain drain, a thorough analysis of the trends in sub-Saharan Africa reveals that just as the causes are complex, the remedies must be multifaceted. The acceleration of globalization means that these migration patterns are not controlled by any lone state or actor. As global markets become more connected and information spreads, people's desire to seek greater economic opportunities abroad will only grow. Ultimately, multi-pronged, collaborative efforts from sending countries, destination countries, and international organizations could be the best way to combat the shortage of scientists, engineers, educators, and especially healthcare workers in sub-Saharan African countries.