

Impact of Migration on Labour Supply in Engineering Sectors: Legal and Regulatory Challenges in Nigeria

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ABSTRACT

The migration of skilled professionals particularly engineers, has become a major global concern, with significant implications for both the country of origin and destination. In Nigeria, however, the situation is complicated by a complex legal and regulatory framework that impacts the migration and labour supply in the engineering sector. This paper explores the dynamics of labour migration in the Nigerian engineering sector, analysing its effects on the availability and quality of the local workforce. It also analysis the legal and regulatory challenges Nigeria faces in managing migration flows to ensure a stable and skilled engineering workforce. It is evident that the outward migration of skilled engineers has led to shortage of workforce a creating a platform for over reliance on foreign experts which has heightened the cost, extend time for completion of projects and hindered national development. Also, lack of retention policies for skilled workers coupled with the gaps in our regulatory frameworks makes it difficult to manage migration of skilled workers. Strengthening our legal and regulatory frameworks, having retention policies and incentives could help curb these identified challenges. Therefore, it is imperative that Nigeria makes concerted efforts to manage its skilled workforce and migration dynamics.

Keywords: Engineering Sector, Labour Supply, Legal and Regulatory Challenges, Migration, and Nigeria

INTRODUCTION

Migration is an important driver of global labour markets in that it reallocates skills, capacities and resources including human capital. The engineering sector in Nigeria has experienced some challenges, particularly through the emigration of professional and skilled personnel alongside foreign engineers who have found their way into the country leading to a strain on labour and regulatory frameworks. The Nigerian government has introduced policies meant to mitigate migration, but enforcement is still an issue. This study examines the impact of migration on Nigeria's engineering labour market with specific reference to legal and regulatory problems. 15% of engineering graduates leave their job within five years of same indicating a significant migratory outflow of engineers in Nigeria over the years in search of better paying jobs, advancement in their careers and living abroad (Nigerian Bureau of Statistics-NBS, 2020). Many Nigerian engineers resettle in developed countries such as the United States, the UK, Canada, and the Middle East, according to studies conducted by NBS (NBS, 2020). Such trends, particularly in civil and mechanical engineering, aggravate labour shortages in priority sectors, as well as infrastructure development (UNDP, 2021). Also, many migrants see Nigeria as a land of opportunity, particularly in industries such as engineering, which require specialized capabilities. (Smith, 2024). Many skilled migrants have the motivation of advanced career opportunities when relocating to Nigeria: local or foreign salaries that are multiples of their home country salaries, international exposure, large/complex/multinational projects and best practice frameworks. Furthermore, many of the migrants view their working experiences in Nigeria as a means through which they can contribute positively to the local economy through skills transfer, especially in the construction-related engineering fields such as civil, mechanical and electrical engineering.

Migration Pattern and Trends in Nigeria's Engineering Sector

The Nigerian Bureau of Statistics in its annual report, stated that over 20,000 engineers leave Nigeria to service foreign nations every year, accounting for approximately 15% of the country's entire engineering workforce

(NBS 2022). The trend has grown steadily over the last decade with brittle work opportunities, low salaries, and an unsecured socio-political environment worsening the situation. According to statistics prepared by the Nigerian Society of Engineers (2020), a considerable number of these emigrants are civil and mechanical engineers moving to countries with a robust infrastructure project like the USA, Canada and the Gulf States. The departure of skilled engineers is commonly termed a 'brain drain' since it drains the local engineering labour market of highly skilled professionals required for critical infrastructure projects. The result has been an increasing reliance on foreign engineers, especially in the oil and gas, construction, and telecommunications industries (Adebayo, 2016).

Nigeria faces a high demand for engineers including civil, mechanical and electrical, yet many engineers are leaving for countries offering better career opportunities. Several push and pull factors contribute to the migration of engineers from Nigeria thereby causing skills gap in the sector. Push factors include poor working conditions, low wages, insecurity, and limited career advancement opportunities. The clear contrast in salary and career advancement opportunities have made Nigerian engineers to seek better opportunities abroad. Locally, engineers face challenges due to inadequate infrastructure and resources, hindering their professional success. Political instability, insecurity, and corruption further stifle growth and innovation. Additionally, limited access to modern technologies and cutting-edge engineering practices, along with a lack of high-tech projects, motivates engineers to migrate to developed countries with these infrastructures and opportunities. According to Adepaju (2004), poor socio-economic and professional engagements are responsible for the high migration rate among Nigerian engineers which has further negatively impaired completion of infrastructure projects, consequently affecting national development.

Faced with these challenges, many Nigerian engineers have set their sights overseas to countries with developed technological infrastructure, improved quality of life, better and more accessible to modern technologies, career advancement opportunities and high-level job market that guarantees higher payroll and more competitive salaries.

For example, many Nigerian civil engineers migrate to the Middle East in search of high-paying construction jobs while others migrate to the US and UK where demand for their skills and talents is very strong. In 2020, the Nigerian Society for Engineers (NSE) reported that about 40% of Nigeria engineers live in the US and UK, thereby calling on the Nigerian government to reverse this trend (Leadership, 2023)¹. This migration trend contributes to the growing brain drain in Nigeria's engineering sector, worsening the workforce shortage. The impact is particularly evident in capital-intensive infrastructure projects, where the country now faces a reduced talent pool, slowing progress in areas such as road development, energy generation, and telecommunications. While the influx of foreign engineers helps fill some immediate labour gaps, it cannot fully replace the talent lost due to migration. This has led to increased reliance on foreign expertise and deepened difficulties in retaining local talents.

The exodus of Nigerian engineers is disrupting workforce dynamics, creating a mismatch between available skills and resources in the field. While their migration strengthens the development of destination countries, it hampers Nigeria's own, thus depriving it of a capable and educated workforce needed for innovation and sustainable development. The push and pull factors drive this complex issue and this enhanced the brain drain syndrome which exacerbates the labour shortage in vital sectors within the country. These dynamics emphasizes the growing importance of foreign talent and the necessity for an immigration system the encourages skilled engineers to remain in Nigeria, fostering local growth and innovation, and addressing critical workforce gaps (Adebayo, 2016).

On the other hand, migrants working in Nigeria's engineering sectors face significant legal and regulatory challenges, particularly related to visa and work permit issues. The process of navigating visa applications and obtaining the necessary permits is often time-consuming and costly, with Nigeria's complex immigration policies and bureaucratic inefficiencies further complicating matters. Additionally, the lack of clarity in the country's labour laws creates uncertainty around employment conditions, as the rights and protections

¹ **Engineers Urge Federal Govt to Address Rising Emigration Challenges**-Written by Hosea Yusuf, December 17, 2023, Leadership Newspaper online

available to migrant workers, especially in engineering, are not always well-defined or enforced, unlike in some other countries. Moreover, Nigeria's labour market frequently prioritizes local workers, which can make it difficult for foreign engineers to secure long-term employment, especially with legal restrictions that limit foreign labour in certain positions, a challenge common in many developing nations.

Labour Migration Effect on Supply of Engineering Professional

The brain-drain of skilled engineers from Nigeria has led to a massive immediate and future impact on the workforce, including a corporate capacity shortage and diminished engineering sectors, especially in the areas of civil, mechanical, and electrical engineering. The key motivation behind this migration is to obtain better work opportunities, professional education, and enhanced living standards in other countries. According to the Engineers Registration Board of Nigeria (ERBN), when the need was still around, Nigeria had an acute shortage of engineers, forcing the country to depend on foreign engineers from several countries. As a result, the loss of talented engineers has put a considerable burden on Nigeria's capacity to address its increasing infrastructure needs, contributing to delays and inefficiencies in vital engineering initiatives. The dearth of indigenous engineers has affected the execution of major projects such as road construction, power generation and telecommunications development, thus inhibiting Nigeria's economic growth and development (Adepoju, 2004).

The impact of this migration goes beyond labor shortages, negatively affecting the quality and pace of infrastructure development in Nigeria. While foreign engineers are brought in to fill the gaps, their presence fosters a competitive environment, leading to job competition and wage disparities for local professionals. Meanwhile, the talent gap in Nigeria continues to grow as engineers emigrate, while local training institutions struggle to meet the demand for skilled professionals in the evolving sector. Relying on external expertise for long-term growth undermines the development of a self-sufficient engineering workforce capable of independently managing large-scale projects.

The brain-drain compounded by the prolonged conflict, has had lasting impact on Nigeria's local engineering talent pool. As older generation engineers emigrate, younger generations miss out on valuable knowledge transfer, skills, and technical expertise. With a limited number of highly skilled professionals, understaffing and overworking of the available labour force cannot be ignored, hence creating a vicious cycle that exacerbates the shortage. All these deepens skills gap which hinders the sector growth, infrastructure development and building a resilient engineering workforce capable of tackling future challenges (Adebayo, 2016). Furthermore, the dependence on foreign expertise places a heavy burden on the economy and society arising from high cost due to demand for higher salaries, benefits and facilities compared to local workforce (Adebayo, 2016). This reliance also stifles local talent growth, leaving local workforce in low demand and tensions between local and foreign workforce due to income inequality and job market imbalances.

Thus, there is a need for more deliberate efforts in training and collaborative work settings to reap the benefits of outside expertise.

The migration of skilled labour has had a great deal of implications for Nigeria as a nation, especially in the engineering profession. The exodus of engineers has strained labour supply, delayed the construction of infrastructure, and caused a long-term erosion of local engineering prowess. In fact, the cycle of migration and brain drain has compounded these challenges, inhibiting Nigeria's ability to grow a strong, independent engineering sector. Comprehensive policies must be established to resolve issues in working conditions, wages and career development opportunities for engineers in country. These interventions will be critical in keeping the well-deserved professional talent and actively promoting the sustainable development of Nigeria's engineering labour force.

However, In Nigeria's engineering sector, migrants often encounter competition with the local workforce, which can lead to mixed perceptions. While some migrants are welcomed due to the high demand for engineering skills, others may face hostility or resentment from local engineers who perceive them as taking job opportunities or driving down wages, particularly if migrants are willing to accept lower salaries or work under less favorable conditions. Additionally, migrants may struggle with integration into Nigerian work

culture, leading to a sense of exclusion. Perceptions of inequality in career progression and social inclusion can result in dissatisfaction among migrant workers.

Legal Frameworks on Migration in Nigeria

The underlisted relevant legal frameworks and its key provisions on labour migration, particularly for engineering professionals, are analysed as follows:

Nigerian Immigration Act (NIA) 2015

The Nigerian Immigration Act of 2015 established the Nigerian Immigration Service (NIS) as the primary authority for enforcing laws governing skilled labour migration. Section 6 of the Act outlines the procedures for issuing visas and work permits for foreign engineers, while Sections 7 to 9 detail regulations regarding their entry, remuneration, and exit. Section 10 addresses the deportation of foreign engineers working without proper permits, and Sections 12 to 14 impose penalties such as fines and deportation for both foreign workers and Nigerian employers who fail to comply with these regulations.

The Labour Act, 1990

The Labour Act of 1990 guarantees the right to employment for both Nigerian and foreign workers, including engineers. Section 7 ensures fair treatment and proper compensation for all employees. Section 10 specifically regulates the working conditions for expatriate professionals like engineers, while Section 16 mandates that foreign engineers be employed only under valid work permits issued by the government.

National Policy on Migration 2015

The National Policy on Migration 2015 focuses on managing migration for economic purposes, particularly the movement of skilled labour to and from Nigeria. Section 5 outlines strategies for managing skilled migration, while Section 7 emphasizes the importance of attracting and retaining skilled professionals, such as engineers, to combat the challenges of brain drain. Section 9 highlights the need to create favourable working environments to facilitate knowledge transfer between foreign and Nigerian engineers.

Expatriate Quota 1963

Under the Expatriate Quota 1963, companies seeking to employ foreign professionals, including engineers, must apply for an expatriate quota. Sections 1 and 2 outlines the process, while Section 3 stipulates the maximum number of foreign workers a company may hire, ensuring a balance between local employment and foreign expertise. Clause 4 outlines compliance mechanisms, prioritizing Nigerian engineers in employment decisions.

National Policy on Labour Migration 2020

This provides an appropriate framework for the regulation of labour migration which benefits Nigeria as a country of origin, transit and destination though ensuring decent treatment of migrants and their families while contributing to national development. This covers both local and foreign experts including engineers. It supports good governance of labour migration, protection and social welfare in the engineering sector in Nigeria.

ECOWAS Protocol on the Free Movement of Persons 1979

Under Article 27 of the ECOWAS Protocol on the Free Movement of Persons (1979), engineers from ECOWAS member states have the right to enter, reside, and work in Nigeria without the need for additional documentation or work permits. Article 29 further supports the free movement of skilled labour, fostering greater integration between member states and promoting economic development.

Migration for Development in Africa (MIDA) Policy

The Migration for Development in Africa (MIDA) Policy aims to encourage the return of engineers and foster the institution of best practices in home-country development projects. Objectives 3 and 6 focus on enhancing cooperation between African countries and international organizations to promote mobility and contribute to local development.

Legal and Regulatory Challenges

Nigeria's immigration policies are designed to regulate the movement of individuals, with particular attention to managing migration in critical sectors, including skilled labour. The Nigerian Immigration Service (NIS) is the primary body responsible for enforcing these policies, as outlined in the Nigerian Immigration Act. This law sets forth the guidelines for legal entry, visa issuance, and the conditions under which foreign professionals, including engineers, can legally work in the country. The government also created the National Policy on Migration to manage both the migration of Nigerians abroad and the entry of foreign nationals into Nigeria. This policy highlights the importance of attracting skilled workers, particularly in sectors like engineering, to contribute to national development. It also aims to regulate and control the outflow of skilled professionals, ensuring that migration does not undermine Nigeria's human capital development.

Nigeria's immigration policies are designed to manage the movement of people, with particular attention to skilled labour migration. Enforcement of these policies lies with the Nigerian Immigration Service (NIS), which regulates entry, visa issuance, and the conditions under which foreign professionals, such as engineers, can legally work in the country. The National Policy on Labour Migration 2020 also focuses on attracting skilled professionals to support national development, while regulating the outflow of talent to prevent a detrimental brain drain.

Despite the existence of these frameworks, several challenges persist in managing skilled labour migration effectively. Nigeria's immigration system is hindered by outdated policies, poor implementation, and a lack of coordination between government agencies and industry stakeholders. There are no specific provisions to manage the migration of skilled professionals, such as engineers, leading to significant shortages in key sectors. These deficiencies in policy and regulation contribute to an increasing brain drain, further undermining national progress.

A major issue is the absence of a cohesive plan to address brain drain. While the Nigerian government has focused on regulating foreign labour, it has failed to formulate adequate policies to retain its own skilled professionals, particularly engineers. Although the Nigerian Immigration Act aims to regulate the influx of foreign workers, it does not provide sufficient incentives to encourage Nigerian engineers to stay in the country. This policy gap has resulted in a mass exodus of skilled engineers seeking better opportunities abroad. Without a clear retention strategy, Nigeria faces a shortage of engineers to meet the growing demands of infrastructure development.

Furthermore, the government has struggled to address the broader effects of migration on the engineering sector. Policies to foster local talent development, facilitate the return of diaspora engineers, and promote skill-sharing between foreign and local engineers have not been effectively implemented. The lack of focus on skill retention and professional development has left local engineers ill-equipped to tackle the country's technological and infrastructure challenges.

A significant gap in the existing legal framework is the recognition and certification of foreign qualifications. While foreign engineers are allowed to work in Nigeria, many face challenges in having their qualifications recognized, which limits their integration into the local labour force. This lack of clarity in the certification process means that foreign engineers are either underutilized or unable to fully contribute their expertise to Nigeria's engineering projects. As a result, the reliance on expatriate labour deepens, further exacerbating the shortage of local talent.

Additionally, multinational companies operating in Nigeria often fail to invest in the development of local capacity. Many foreign companies bring in their own skilled professionals, rather than training and developing Nigerian engineers. This practice perpetuates Nigeria's dependence on foreign engineers, as there are few incentives for these companies to transfer knowledge, technology, and skills to local workers. This lack of capacity-building undermines long-term development goals, as the country remains reliant on foreign labour to fill critical roles instead of nurturing a self-sufficient workforce.

Despite having immigration policies designed to regulate the movement of skilled labour, Nigeria continues to struggle with managing migration in the engineering sector. The lack of effective policies to retain skilled engineers has led to a continuous shortage of professionals. Additionally, the ease with which Nigerian engineers can work abroad, combined with the limited opportunities and incentives offered within the country, has fueled the ongoing brain drain. The government must review its immigration policies, particularly in relation to brain drain, and ensure that local talent is retained by streamlining certification processes and creating incentives for multinational corporations and foreign professionals to invest in Nigeria's future workforce.

Finally, while Nigeria has established various policies to manage skilled labour migration, including the Nigeria Immigration Act 2015, Labour Act 1990 and the National Policy on Labour Migration 2020, these frameworks have not been fully effective in addressing the challenges facing the engineering sector. There is an urgent need for comprehensive policy reforms that focus on retaining local talent, attracting engineers from the diaspora, and encouraging multinational companies to invest in the development of Nigeria's engineering workforce. Only through such efforts can Nigeria build a sustainable, self-reliant engineering workforce capable of addressing the country's infrastructure and technological challenges.

The Role and Efforts of the Nigerian Government in Regulating Migration Flows in Engineering Sectors

The Nigerian government plays a significant role in regulating migration flows in the engineering sector through policies, visa issuance, and labour market interventions. The government has created incentives to attract skilled foreign labour, such as offering work permits and specialized visas for expatriate engineers working in critical sectors like infrastructure and energy. However, the government's focus on foreign labour often overlooks strategies to curb the migration of Nigerian engineers, many of whom seek better career opportunities abroad due to inadequate working conditions and low wages.

In response, the government has initiated policies to enhance the local capacity for skilled labour in sectors such as engineering, but the lack of effective enforcement mechanisms hampers the success of these programs. For example, while there have been initiatives to foster local talent through education and training, the migration of skilled engineers continues, as policies addressing job quality, salary levels, and professional development remain insufficiently developed. Strengthening these initiatives could enhance local workforce retention and reduce reliance on foreign professionals.

Nigeria's legal and regulatory frameworks provide a foundation for managing migration, substantial gaps exist that hinder the effective management of skilled labour migration, particularly in engineering sectors. These gaps need to be addressed to retain local talent, encourage the transfer of skills from foreign professionals, and ensure the sustainable development of Nigeria's engineering workforce.

The Nigerian government has made several attempts to address these challenges, such as creating policies to encourage the return of skilled professionals and developing training programs to enhance the skills of local engineers. However, these efforts have not been wholly successful, as issues such as political instability, corruption, and insufficient investment in infrastructure persist, pushing engineers to seek opportunities abroad.

Nigerian engineers returned to the country in droves, but the issue: Are these engineers returning to contribute to national development, or are they going to continue suffering for the most part because the environment is not conducive to their working? Moreso, attracting Nigerian engineers abroad to return and contribute to national development presents several regulatory barriers. One major challenge is the absence of

comprehensive policies designed specifically to incentivize diaspora engineers to return. While there are some efforts, they are often insufficient or fragmented, making it difficult for engineers to see clear benefits in returning. These policies need to provide competitive salaries, professional opportunities, and improved working conditions that match or exceed those available in developed countries.

Political instability, economic uncertainty, and the legal environment in Nigeria further complicate the situation. Engineers abroad may be discouraged by the lack of a stable political environment, rampant corruption, and inadequate support systems for businesses and professionals. These factors make it difficult for engineers to trust that their return would be sustainable or rewarding.

The legal frameworks in place for reintegration are also lacking. Nigeria needs legal reforms that facilitate the recognition of qualifications and smoothen the re-entry process for returning engineers. Policies that encourage knowledge transfer, such as tax incentives for companies that hire returning professionals and create mentorship programs, are also needed. Moreover, creating a clear pathway for engineers to transfer their expertise to local industries would support both their professional growth and Nigeria's long-term development goals (Adepoju, 2004).

Addressing these issues requires a holistic approach involving better political stability, economic incentives, and legal reforms to ensure that the return of Nigerian engineers results in meaningful contributions to national development.

There are necessary legal reforms needed in Nigeria that encourage the recognition of qualifications and help ease the process of getting back into practice for returnee engineers. You also need policies that encourage knowledge transfer, such as tax breaks for companies that hire returning professionals and set up mentorship programs. Additionally, mapping a clear trajectory through which infrastructure engineers can import their knowledge transfer to local industries would serve as a motivation to these professionals and subsequently, serve Nigeria's long term development aspirations (Adepoju, 2004).

Migration Economic Effects on Engineering Countenance

The emigration of educated Nigerian engineers to other countries has resulted in negative impacts on Nigeria's development outcomes, especially its engineering professions. One significant impact of this is a labour vacuum in crucial spheres like civil, mechanic, and electric engineering. Challenges in meeting the growing demand for infrastructure development, industrial expansion, and technological advancement in Nigeria become a significant challenge as Nigerian engineers publicly migrate abroad in pursuit of better opportunities. This has resulted in a shortage of talent, causing significant delays in the completion of some key infrastructure projects— roadworks or building power generation and telecommunications— needed for sustained economic growth (NBS, 2020). As stated before, almost 15% of engineering graduates migrate abroad within five years of graduation, exacerbating the drain of skilled labour. Due to it, the ability at which vital public and private sector tasks could be finished is hampered, therefore dragging national development.

This impacts negatively on Nigeria's global competitiveness, as there are persistent labour shortages in engineering sectors. This scarcity of engineers hinders innovation as well as research and development, and results in the country falling short of enticing investment opportunities. This lack of manpower to execute these projects delays large-scale infrastructure and serves as limitation to the nation's ability to create sustainable engineering models. Without proper engineering talent, economic development in critical sectors, such as construction, manufacturing and energy, suffers delays or inefficiencies.

Apart from the economic consequences of having to depend on expatriate engineers to drill, lay pipelines and valve systems in the oil and gas industry, there is also the social implication. Foreign engineers bring in skills that are in critical shortage, but their presence can also lead to elevated private and public sector budgets through increased labour costs. Local manufactures often prefer to hire an expatriate instead of investing in talent development. The consequence is that foreign know-how is a costly substitute for local engineers, which invariably drives the cost of doing business in Nigeria higher.

Additionally, the reliance on foreign labour breeds economic dependency and reflects a situation where Nigeria increasingly relies on foreigners instead of developing indigenous talent. This dependence on foreign engineers effectively limits the transfer of knowledge and technology to Nigerian labour, causing the local workforce to miss out on the opportunity to gain world-class skills. This strengthens the skills gap over time, making it increasingly challenging for Nigeria to create local engineering solutions and retain an ongoing workforce.

The exodus of highly skilled engineers has resulted in far-reaching economic impacts on Nigeria's engineering sectors, including decelerated infrastructure development, constrained growth potential of both public and private sector projects, as well as enhanced reliance on foreign expertise. In order to curb these adverse impacts, it is imperative that the Nigerian government formulate policies that will help in retaining skilled engineers within the country, and encourage those abroad to return home, while also ensuring an enabling environment for local talent to thrive, while also reducing the dependence on foreign labour.

Migrants in Nigeria often perceive their presence as a significant contribution to the country's economic development, particularly through their involvement in infrastructure projects and the engineering sector. They see themselves as playing a vital role in driving the growth of Nigeria's economy by filling skill gaps that are challenging to address locally. Additionally, migrants view their earnings as a means of supporting their families and communities back home, with remittances creating positive ripple effects that promote economic development in their countries of origin. This fosters a broader perception of migration as beneficial for both the sending and receiving countries.

Legal, Policy, And Institutional Reforms Needed For Efficient Labour Migration Management

The brain-drain of skilled labour, especially engineers migrating to developed nations, has been a huge blow to Nigeria. Although migration is a common global trend, its impact on Nigeria's engineering sector has led to growing calls for legal and institutional reforms. Addressing the challenges related to migration and labour supply in the engineering sector requires a comprehensive approach. This includes policy recommendations focused on retaining skilled engineers, improving the legal framework, and attracting engineers from the diaspora. To effectively manage skilled labour migration, Nigeria must strengthen its legal structures, enhance coordination among relevant stakeholders, and improve the role of regulatory bodies.

By implementing such reforms, Nigeria can better address the labour shortages in its engineering sectors and ensure a more sustainable, locally driven workforce. This multi-pronged strategy is essential for creating an environment where skilled engineers are encouraged to stay, return, or contribute, ultimately supporting national development and infrastructural growth. The include the following:

Strengthen Legal Frameworks

To effectively manage labour migration, the priority should be updating and strengthening Nigeria's immigration laws. Currently, the nation's policies are outdated and fail to address the challenges posed by contemporary skilled labour migration. To ensure the efficient management of professionals, particularly in engineering, there is a need for more robust and specific immigration policies. These policies should target key sectors, especially engineering, with the aim of reducing brain drain by offering incentives for Nigerian engineers to remain in the country or return after acquiring international experience. Such measures may include tax breaks, scholarships, and funding for training initiatives designed to retain skilled talent domestically.

The current legal framework for migration does not adequately address the unique demands of skilled labour, particularly in engineering. A key reform is to develop legislation that focuses on the retention and reintegration of Nigerian engineers who work abroad. The government could offer incentives such as tax relief, financial support for starting engineering firms, and mentorship programs for younger engineers, making the country more attractive for returning professionals.

Improving recognition and certification processes for foreign-trained engineers is another key area. By making the process of recognising foreign credentials easier, Nigeria can better expand its labour market to engineers with global experience. This can fill the divide between local and foreign talent, enabling overseas-trained engineers to play a role in growing the nation's engineering sector.

Moreover, migration legislation should also delineate unambiguous processes for validating foreign professionals' credentials as such clarity will ensure that engineers migrating to Nigeria are able to integrate seamlessly into the local workforce. For this to work, skills and knowledge transfer must be encouraged by policy. Mechanisms for returning engineers to share their skills through training or mentoring programs can build local capacity. For example, necessary visa and work permit policy reforms be made. While foreign expertise plays a crucial role in bridging skill gaps, foreign engineers should complement, not replace, local talent. Nigeria has its own qualified engineers, and leveraging foreign professionals can enhance the country's infrastructure needs. By integrating foreign skills with local talent, Nigeria can effectively harness its domestic human capital while benefiting from the knowledge and experience of professionals based abroad to drive national development.

Coordinated Policy Measures

Lack of proper incentives and opportunities in the labour market within Nigeria is a strong motivator for skilled engineers to emigrate. Policies that will help in retaining these professionals in the country must address critical issues which include low wages and salaries, poor working conditions, and limited career growth prospects among others.

Firstly, the government must introduce salary reforms that ensure engineers are compensated at competitive rates, particularly in sectors crucial to national development, such as civil, electrical, and mechanical engineering. Implementing a minimum wage structure for engineers in both the public and private sectors, aligned with industry standards, would provide the necessary financial incentive to discourage migration. Additionally, offering comprehensive benefits, such as health insurance, pension schemes, and opportunities for career progression, would make working conditions more attractive to engineers and help retain talent within the country.

A significant challenge in addressing skilled labour migration is the lack of coordination between government bodies, educational institutions, and the private sector. Skilled labour migration is influenced by a range of factors, including economic opportunities, educational quality, and job availability. Therefore, an effective strategy for managing migration must involve a collaborative approach and partnership among all relevant stakeholders. Policy towards skilled migration must not only consider government initiatives in isolation but must align with private sector and education initiatives to build the capacity of Nigeria's human resource pool.

For instance, universities, polytechnics, and technical colleges can collaborate with the government to ensure that engineering curricula meet the evolving and changing needs of the job market. This would help equip graduates with the necessary skills to thrive in modern engineering sectors. Similarly, the private sector could play a pivotal role by investing in talent development programs that prepare Nigerian engineers for global job markets, while simultaneously creating local opportunities to attract and retain skilled workers. In the long term, such cooperation would foster an environment and culture where the Nigerian workforce is better equipped to meet both local and international engineering demands.

In addition, designing long-term professional development programs and providing access to the latest technologies will allow engineers to remain engaged and to develop their careers. The state needs to work with industry and academia to develop ongoing training, building skills in innovation and advanced engineering. Such initiatives would not only help engineers develop themselves and be a source of motivation for them to contribute to the growth of Nigeria's economy and infrastructure but would eventually reduce the incentives for migration.

These factors that have been highlighted: competitive compensation, improved working conditions, as well as collaboration between the government, academia and the private sector must be addressed for Nigeria to retain

its skilled engineers and slow down the migration of its engineering industry. These initiatives will create a more conducive environment for all professionals to be trained and excel in the country, thereby contributing to the long-term development and growth of Nigeria.

Attracting Engineers from the Diaspora

Attracting Nigerian engineers in the diaspora is one of the best solutions to bridge the labour shortages in the Nigerian engineering industry. Such professionals often also have invaluable international experience and knowledge of world-class technologies that can help modernize Nigeria's infrastructure and engineering practice. To get those engineers back home, the Nigerian government would have to create an attractive enabling environment.

This could be in form of financial incentives such as tax rebates and subsidies for engineers who return to Nigeria, as well as initiatives to support the entrepreneurial spirit, such as grants for engineers who want to start their own firms. Further, establishing a supportive environment including relocation support, linking to professional connections, local firms and projects would encourage diaspora engineers to return effectively.

Additionally, the Nigerian government could create a "diaspora returnee network" whereby ex-migrants can mentor younger engineers and have collaborative work with local engineers on projects. This will enable knowledge transfer and will allow local engineers to learn from the international exposure and experiences of their counterparts abroad.

Role of Regulatory Bodies

The Nigerian government's regulatory bodies, such as the Nigerian Immigration Service (NIS) and the National Universities Commission (NUC), play a pivotal role in managing skilled migration within the engineering sector. However, these agencies often lack the coordination and resources necessary to implement effective policies that address the complexities of labour migration. Regulatory bodies must be empowered to enforce regulations that protect the interests of local professionals while simultaneously facilitating the integration of foreign talent.

For example, the NIS must be equipped to regulate the entry and exit of engineers more efficiently, ensuring that the country does not experience skill shortages while preventing a harmful influx of foreign workers that could further exacerbate the scarcity of local talent. Additionally, these agencies must collaborate with professional bodies like the Nigerian Society of Engineers (NSE) to develop accreditation processes for foreign qualifications, which would make it easier for qualified engineers to work in Nigeria.

In addition, the Nigerian government should strengthen regulatory bodies such as Council for the Regulation of Engineering in Nigeria (COREN) as the statutory body established by the Nigerian government to regulate and control the practice of engineering in the country through monitoring compliance with set standards for engineering education, certification of engineers and engineering professionals, and ensuring that engineering practices in Nigeria meet established safety and quality standards to safeguard public safety and contribute to the nation's development. These bodies would be involved in the monitoring of labour migration trends, gathering and track data on the outflow of engineers, and implementing targeted programs to retain and attract skilled labour in critical sectors.

Furthermore, these agencies should also liaise with professional bodies such as the Nigerian Society of Engineers (NSE) to establish accreditation processes to evaluate foreign qualifications to ease the process of qualified engineers to work in Nigeria.

Best Practices and Case Studies of Migration Management in Other Countries

Several countries have successfully implemented strategies to manage skilled labour migration, particularly in the engineering sector, offering valuable lessons for Nigeria. These nations have recognized the importance of balancing the inflow and outflow of skilled professionals to ensure that they benefit both their economies and

the global workforce. By examining best practices from these countries, Nigeria can develop more effective migration policies.

Canada's Immigration Policy: Canada is often cited as a model for managing skilled migration, particularly in the engineering sector. The country has implemented a points-based immigration system, the Express Entry program, which awards points for various factors such as education, work experience, and language proficiency. Engineers, along with other skilled professionals, can migrate based on their qualifications and skills, and the program prioritizes those who are most likely to contribute to the Canadian economy. Additionally, Canada provides pathways for skilled workers to gain permanent residency, ensuring that the talent remains in the country for long-term contributions.

Best Practice: Canada's focus on creating transparent, merit-based immigration systems has helped attract high-skilled workers, including engineers, who are critical to the country's economic growth. Moreover, Canada offers pathways for engineers to integrate into the local workforce through credential recognition programs and continuous professional development. Nigeria could adopt a similar framework that encourages the migration of skilled engineers while offering incentives for retention and reintegration of engineers returning to the country.

Germany's Dual Education System: Germany's success in managing skilled labour migration can largely be attributed to its dual education system, which combines classroom learning with practical, on-the-job training. This system ensures that the country's engineers are not only highly skilled but also well-prepared for real-world challenges in their respective industries. Furthermore, Germany has focused on integrating foreign-trained engineers into the workforce by recognizing international qualifications and offering language and integration programs. The country also has a structured visa process for skilled workers, making it easier for foreign engineers to work legally in the country.

Best Practice: Germany's emphasis on vocational training and its recognition of foreign qualifications are key aspects that have contributed to its success in managing skilled migration. Nigeria could benefit from adopting a similar approach by enhancing its own technical education system and streamlining the recognition of foreign qualifications for returning engineers. This would not only attract skilled engineers from abroad but also provide local engineers with opportunities to develop their expertise in line with global standards.

Australia's Skilled Migration Program: Australia has developed a well-structured skilled migration program that addresses labour shortages in key sectors, including engineering. The program is points-based and prioritizes professionals who meet the needs of the Australian labour market. Engineers from Nigeria and other countries have successfully migrated to Australia, benefiting from opportunities in sectors such as construction, infrastructure, and mining. Australia also offers pathways for permanent residency for skilled migrants, which incentivizes professionals to stay and contribute to the economy long-term. Additionally, the country promotes knowledge transfer through various programs designed to integrate skilled migrants into the local workforce.

Best Practice: Australia's focus on aligning migration policies with labour market demands ensures that skilled professionals contribute directly to the economy. Nigeria can adopt a similar approach by assessing the country's demand for specific engineering skills and aligning immigration policies with those needs. Additionally, the recognition of foreign qualifications and facilitating knowledge transfer programs for returning engineers can help foster a culture of innovation and growth in the Nigerian engineering sector.

Lessons for Nigeria: Nigeria can learn several key lessons from these countries' migration management practices. First, creating a merit-based, transparent immigration system for skilled professionals, similar to Canada's points-based system, could ensure that only the most qualified engineers are attracted to the country. Additionally, strengthening Nigeria's educational system and recognizing foreign qualifications, as seen in Germany's dual education system, would ensure that local engineers can effectively integrate with international standards. Finally, offering long-term incentives, including pathways for permanent residency or citizenship for returning engineers, could encourage professionals to return to Nigeria after gaining international experience, as demonstrated by Australia's skilled migration program.

By adopting best practices from these countries and tailoring them to Nigeria's unique economic and developmental needs, the country can develop a more effective strategy for managing skilled labour migration, particularly in the engineering sector.

FINDINGS

1. **Outward Migration of Skilled Engineers:** The migration of skilled engineers from Nigeria has resulted in labour shortages, creating a heightened reliance on foreign engineers to fill gaps in the workforce. This trend has exacerbated the scarcity of local expertise, impacting the country's ability to effectively meet its engineering needs. The growing dependence on foreign professionals highlights the need for policies that can retain and attract local talent.
2. **Impact on Economic Development:** The lack of skilled engineers impedes the timely completion of essential infrastructure projects, hindering progress in national development. This shortage directly affects the country's ability to build and maintain vital systems, delaying economic growth and development in key sectors.
3. **Regulatory Gaps:** The current legal and regulatory frameworks for managing labour migration in Nigeria are insufficient, resulting in inefficiencies in tracking and addressing migration trends within the engineering sector. These gaps hinder effective management and fail to meet the evolving needs of the workforce, ultimately impeding the country's ability to retain or attract skilled professionals.
4. **Lack of Retention Policies:** Nigeria lacks adequate policies or incentives designed to retain skilled engineers or attract those working abroad back to the country. Without strategies to provide career growth opportunities, competitive wages, or favourable working conditions, engineers are more likely to seek better prospects overseas, exacerbating the brain drain issue.
5. **Dependence on Foreign Engineers:** While foreign engineers help address the skill gaps in Nigeria's engineering sector, their presence does not fully compensate for the shortage of local professionals. This reliance on expatriates can also create wage disparities, as foreign workers often command higher salaries, which affects the overall economic balance and local talent development. Nigeria engineers abroad and further reduce the brain-drain and fortify the local workforce.

RECOMMENDATIONS

1. **Strengthening Legal and Regulatory Frameworks:** The Nigerian government must revise and enforce labour migration policies tailored to the engineering sector. This includes establishing systems to monitor skilled labour movement and ensuring adherence to labour regulations, fostering a more effective management of migration flows.
2. **Attracting and Retaining Skilled Engineers:** Offering incentives such as tax exemptions, grants, and opportunities for career growth can help retain Nigeria's engineering talent and encourage Nigerian engineers abroad to return, thus reducing the brain drain and strengthening the local workforce.
3. **Enhancing Local Training Programs:** Increased investment in engineering education and vocational training is essential for bridging skill gaps. Strengthening local programs will reduce reliance on foreign engineers and ensure a workforce capable of meeting national infrastructure demands.
4. **Collaboration with Private Sector:** The government should partner with private companies and educational institutions to build a sustainable talent pipeline. This collaboration will create opportunities for local engineers, ensuring a consistent supply of skilled professionals within the country.
5. **Policy Incentives for Diaspora Engagement:** Developing policies that ease the reintegration of Nigerian engineers from the diaspora and provide incentives for their return will help address brain

drain. This will also encourage knowledge sharing and transfer of expertise to the local engineering sector.

CONCLUSION

There is a need for legal and institutional reforms for effective management of labour migration in Nigeria's engineering sector. The key to overcoming the challenges posed by skilled migration lies in strengthening migration policies, fostering collaboration among government bodies, educational institutions, and the private sector, and empowering regulatory agencies to manage migration trends efficiently. Skilled migration, particularly in engineering, has led to critical labour shortages in Nigeria, with significant consequences for national development and infrastructure projects. These challenges, compounded by factors like low wages, poor working conditions, limited career progression, and political instability, have resulted in a diminished pool of engineers in vital sectors like civil, electrical, and mechanical engineering.

The outflow of skilled professionals has placed a strain on the country's ability to execute essential infrastructure projects on time, which has had a negative impact on both public and private sector development. While migration is a global issue, Nigeria's current immigration policies are insufficient to tackle the intricacies of skilled labour migration. The existing Nigerian Immigration Act and related policies are outdated, lacking specific measures to address the needs of crucial sectors like engineering. Additionally, these policies fail to offer effective strategies for encouraging engineers to remain in the country or return after gaining international experience, leaving Nigeria increasingly dependent on foreign expertise.

The lack of cohesive strategies among government agencies, educational institutions, and the private sector further exacerbates the situation. Fragmented efforts hinder the management of skilled labour migration and create inefficiencies in addressing the challenges posed by the engineering sector's talent shortages. Without policies that specifically cater to engineers, the country's reliance on foreign professionals continues to grow, resulting in insufficiently skilled local labour and wage disparities that drain local resources.

For Nigeria to resolve these issues effectively, urgent reforms to its legal and regulatory frameworks are essential. The legal frameworks outlined above serve as a foundational structure for managing skilled labour migration, especially in Nigeria's engineering sector. The current laws and policies provide a foundation for managing migration but require updates and improved coordination to address emerging issues. Strengthening these frameworks, especially in the engineering sector, will better regulate skilled migration. Implementing retention policies, attracting diaspora engineers, and fostering knowledge transfer are crucial steps. Offering financial incentives like tax breaks, scholarships, and career advancement opportunities can encourage engineers to remain in Nigeria or return after gaining experience abroad. These strategies will mitigate brain drain and contribute to the country's human capital development, fostering a more sustainable and self-reliant engineering workforce.

Moreover, enhancing coordination between the government, educational institutions, and the private sector is critical for a holistic approach to managing labour migration. Collaboration between universities, technical colleges, and the government can ensure that engineering curricula align with industry needs, producing graduates who meet the demands of both local and international markets. Similarly, the private sector must invest in local talent development programs to cultivate the necessary skills among Nigerian engineers. Furthermore, recognizing the qualifications of foreign-trained engineers and integrating them effectively into the local workforce will optimize the use of global expertise and bridge the skills gap.

Addressing the migration-related challenges within Nigeria's engineering sector requires a multi-faceted approach. By strengthening legal frameworks, implementing retention policies, improving the integration of foreign-trained engineers, and fostering collaboration between all stakeholders, Nigeria can begin to mitigate the impact of skilled migration. The development of a sustainable, self-sufficient engineering workforce will enable the country to address its infrastructural needs and contribute significantly to national economic growth.

Finally, while Nigeria faces substantial challenges in maintaining an adequate supply of skilled engineers, there are solutions available. By improving working conditions, bolstering legal frameworks, and

implementing policies that encourage the return of engineers from the diaspora, the country can begin to address the critical gaps in its engineering workforce. These measures, along with the integration of foreign-trained professionals and an emphasis on knowledge transfer, will be instrumental in the long-term growth and success of Nigeria's engineering sector. Through these reforms, Nigeria can reduce its reliance on foreign expertise, build a resilient workforce, and ensure that its infrastructure projects proceed on schedule, driving sustained national development.

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