## ACKNOWLEDGEMENT

The Organizing, Editorial and Technical Committees of the ECOWAS Emerging Technologies (iSTEAMS) Multidisciplinary Conference acknowledge the contributions of all organizations, institutions and individuals who contributed through various means to the success of the Conference. In particular, the committees gratefully acknowledge all authors, participants and delegates. Special gratitude goes to our supporting and collaborating partners and institutions

## COPYRIGHT & REPRINT POLICY



For all enquiries on the Accra Bespoke Innovations Conference and the Africa Artificial Intelligence Stakeholders Summit and other information please contact the Conference Programme Standing Committee using info@isteams.net

# CONTENTS

Society for Multidisciplinary & Advanced Research Techniques (SMART)
West Midlands Open University – Projects, Research, Innovations, Strategies & Multimedia (PRISM) Centre
SMART Scientific Projects & Research Consortium (SMART SPaRC)
Sekinah-Hope Foundation for Female STEM Education
ICT University Foundations USA
Harmath Global Educational Services

38th International Science Technology Education Arts Management
& Social Sciences (iSTEAMS) Bespoke Conference - Accra Ghana 2024

# Restructuring Nigeria: A Pathway to Political and Economic Revitalization

**Longe, Bankole-Phillips. A.**
Psychology Department
Atlantic International University
Honolulu Hawaii, USA

## ABSTRACT

This paper explores the present economic and other challenges facing Nigeria as a nation. It addresses the issue from a restructuring paerspective which a number of voices already advocated as a pathway to political and economic revitalization for the nation.

**Keywords:** Restructuring, Nigeria, Pathway, Political and Economic Revitalization

**Proceedings Citation Format**
Longe. Bankole-Philips A. (2024): Restructuring Nigeria: A Pathway to Political and Economic Revitalization. Proceedings of the 38th iSTEAMS Multidisciplinary Bespoke Conference. 15th – 19th July, 2024. University of Ghana, Accra, Ghana. Pp 1-2. dx.doi.org/10.22624/AIMS/ACCRABESPOKE2024P1

## INTRODUCTION

Nigeria is the most populous black nation in the world. She has always experienced political and economic challenges that many people have apprehended with every seriousness. The present political and economic structure of the country, which basically deals with Igbo/Hausa/Fulani elite structure that has existed since the era of our military of course the Nigerian military, must and should be reformed and tried before the actual fact that corruption still lies among their loins. The point is we must restructure Nigeria with all seriousness and this must be done. Nigerians who favor decentralizing the country have not budged in their zealous desire for an economically viable and politically stable Nigeria. They argue restructuring Nigeria is necessary to revitalize Africa's economic giant. According to them, a geographical restructuring of Nigeria's states and establishing institutions that empower regions – along with a delegation of power to these institutions based on six geopolitical zones – would bring national power closer to the people, thereby enhancing national unity. In this article, I will explore the intellectual, psychological, political and economic advantages of restructuring Nigeria in the nearest future, how our struggles or agitation for decentralization will aid all the regions and finally, how decentralization will improve the quality of leadership not just in the country but also within all the regions.

## 2. REGIONAL ADVANTAGES

a) **North**: Rearrangement will allow the North to better exploit its agricultural resources, and revitalise its economy.
b) **South**: The South would benefit from greater self-determination over its oil assets as a source of economic prosperity and development.
c) **East**: The East would rely upon its factories as a base for commodities and commerce.
d) West: The west will leverage on her agricultural vast lands and opportunities for cash crop exports

## 3. CHALLENGES AND FUTURE ADVANTAGES

Despite the associated headaches, notably fears of a short to medium-term economic dislocation and often political pushback, a restructured Nigeria will ultimately be hugely beneficial at considerably lower long-term cost. A restructured Nigeria will:

a) Enhance National Unity: By addressing regional grievances and promoting shared citizenship.
b) Foster Economic Growth: Through decentralization, diversification, and increased revenue.
c) Strengthen Democracy: By ensuring more representative governance and reduced corruption.

## 4. CONCLUSION

In short, restructuring Nigeria not only constitutes a precondition for the political and economic rejuvenation of the country. It is also a necessary requirement. It is the working recipe for promoting shared, competitive but complementary citizenship as well as for curbing the political and security crises of our time, in effect tapping the wellsprings of the country's hitherto pubertal lucrative potentials. For citizens in a restructured country, future becomes no longer a mere fancy, but a present and real reality. Or as Ake powerfully submitted: 'If Nigeria fails in the task of restructuring, its prospects are bleak indeed, the future as a mirage.' From the author's critical discourse on Nigerian federalism and federal restructuring, Sadiq S A Olafemi, the current acting president of the Social Science Association of Nigeria, is an emeritus professor, formerly the head of history and archives department at the then University of Ife, now Obafemi Awolowo University, Ile-Ife, Nigeria. 1995 (p. 25).

## WORKS CONSULTED :

1. Abubakar, A. (2017) Excerpt of Interview Conducted by the Nigerian Vanguard Entitled "Nigeria: Whatis Restructuring". June 30.
2. Bello, S.A. (2017) "Restructuring Nigeria: A Critical Analysis". Published in THISDAYLive June 11
3. Ikenna Ukpabi Unya (2022): Restructuring Nigeria: Issues, Challenges And The Way Forward. International Journal of Integrative Humanism Vol.10(2):113-122
4. Nwosu, A.B.C. (2016) "Why North is Afraid of Restructuring". Text of the Interview Granted to DailySun, Thursday, September 15

Society for Multidisciplinary & Advanced Research Techniques (SMART)
West Midlands Open University – Projects, Research, Innovations, Strategies & Multimedia (PRISM) Centre
SMART Scientific Projects & Research Consortium (SMART SPaRC)
Sekinah-Hope Foundation for Female STEM Education
ICT University Foundations USA
Harmath Global Educational Services

38th International Science Technology Education Arts Management
& Social Sciences (iSTEAMS) Bespoke Conference - Accra Ghana 2024

# Global Power Factors – Implication for Africa in Era of Artificial Intelligence

**[1,2]Adebomehin, A. A , [1,2]Dahiru, A.S., [1]Akinduyite, T.K., [1]Alutaoji, C., [1]Odeyemi, O.A. & [1]Ofodile, I.C.**
[1]Nigeria Air Force Research and Development Centre, Osogbo, Nigeria
[2]Air Force Institute of Technology, Kaduna, Nigeria
**E-mail**: aaakeem2@gmail.com, aa.adebomehin@airforce.mil.ng
**Mobile Nos**: +2348107681223, +2348099873222

## ABSTRACT

This paper presents a summary analysis on the global evolution of Artificial Intelligence (AI) and its impacts on global power configuration with focus on Africa, along with a brief deduction from the analysis. It also highlights the AI efforts of the Nigerian Air Force (NAF) through its Research and Development (R&D) establishment; the Air Force Research and Development Centre (AFRDC) Osogbo - Nigeria.

**Keywords:** Restructuring, Nigeria, Pathway, Political and Economic Revitalization

**Proceedings Citation Format**
Adebomehin, A. A , Dahiru, A.S., Akinduyite, T.K., Alutaoji, C., Odeyemi, O.A. & Ofodile, I.C. (2024): Global Power Factors – Implication for Africa in Era of Artificial Intelligence. Proceedings of the 378h iSTEAMS Multidisciplinary Bespoke Conference. 15th – 19th June, 2024. University of Ghana, Accra, Ghana. Pp 3-8.
dx.doi.org/10.22624/AIMS/ACCRABESPOKE2024P2

## 1. OVERVIEW

AI has become an indispensable tool in the current revolutionary age. It plays an increasingly significant role in shaping global affairs across various sectors. AI is becoming a key driver of change across the world, with profound implications for economies, societies and geopolitics while transforming industries globally. Countries that lead in AI development are likely to have a competitive edge amongst committee of Nations. Moreover, understanding and managing the impact of AI is crucial for shaping a sustainable and inclusive future.

Additionally, knowledge of how global powers are using AI can help African countries to strategically position themselves to take advantage of emerging opportunities and navigate potential challenges. Also, the awareness of global AI trends can inform the development of AI policies and regulations in African countries. This can help ensure that policies are aligned with international standards and best practices. Furthermore, it can also help African countries to identify potential partners for collaboration in AI research, development, implementation and capacity building. It is believed more importantly, that a clear understanding of how global powers are leveraging AI is essential for Africa to effectively harness the benefits of AI, mitigate potential risks and contribute to shaping the future of AI in a way that is inclusive and beneficial to the Continent.

### 1.1 Artificial Intelligence and Global Powers

The evolution of AI has generated profound implications for international power dynamics with attendant benefits and risks. Similarly, proper integration of AI has the potential to strengthen existing dimensions of international power. AI is a very comprehensive area of study concerned with all aspects of imitating cognitive functions to solve the world's complex challenges and construct systems that function like human beings (Wang, 2019). AI is a broad scientific discipline that supports computer systems to solve complex challenges by imitating natural human processes, such as acquiring knowledge and learning, thinking and self-correction (Wadden, 2022). Global power on the other hand refers to a country's ability to exert influence both politically and economically on a global scale. Indeed, a country's global power is often measured by its military strength, economic dominance, diplomatic relationships and technological capabilities. It must be stated that AI has unprecedented capacity to reshape individual lives, societies and the environment. Recent advances in AI have created strong incentives for countries to develop governance strategies for maximizing the potential benefits of AI technologies whilst mitigating their risks.

To this end, each country is pushing the technology boundaries, developing AI champions and finding the most relevant use cases and advantageous AI areas for adoption. The United States (U.S), Russia, China and some other EU countries are in different ways seeking to advance their absolute and relative positions, protect their interests and secure leverage as they follow distinct strategies. The U.S has traditionally enjoyed global control of AI, mainly because of its extensive digital investments and infrastructure through its nationally based corporations such as Google, Facebook, YouTube and Twitter (Smuha, 2021). However, the USA's digital hegemony is now being challenged by China, particularly in regard to future AI development and investments in the global South (Bogdanov and Evtodyeva,2021). It is believed that China's offensive realism in exporting and developing AI in Africa is built on the desire to spread her self-interests, maximize power and counter the actions of fearful states such as the U.S as part of her survival in the international system (Savage, 2020).

The U.S government is actively harnessing AI technologies to improve its services and operations. Inspite of this, China has emerged as the central player among nations at the forefront of AI revolution. This surge in prominence is as a result of Chinese government's unwavering commitment to AI. This is evident through various policies, funding initiatives and strategic plans such as the "New Generation Artificial Intelligence Development Plan" launched in 2017. This ambitious plan positions China on the path to becoming a global AI leader by 2030. China's rise in the AI domain is attributed not only to government support but also to the contribution of leading AI research institutions and companies like Baidu, Tencent, Alibaba, and SenseTime.

These organizations have become magnets for global AI talent, propelling China's rapid advancements in AI. In fact, the nation's vast population generates a massive amount of data daily, which is a crucial resource for training and refining AI algorithms. Leveraging this data, Chinese companies have developed advanced AI models, excelling in areas like natural language processing, image recognition, and recommendation systems which are at the forefront of cutting edge AI optimization.

China's influence in the AI domain extends globally, especially through the export of AI technologies and solutions. China's AI footprint in Africa can be traced back to the development of fibre-optic cables and mobile broadband network systems more than a decade ago, with the primary goal to improve Internet access to the people (Kothari and Cruikshank, 2022). Between the year 2000 and 2014, China had several digital-related projects across 44 countries in Africa with half of them located in Nigeria, Ethiopia, and Zimbabwe (Wang et al., 2020). Recent estimates suggest that over the last 20 years, Chinese technological giant Huawei has built 50% of Africa's 3G networks and 70% of its 4G networks, indicating that China is entrenching deeper into the Continent's information systems (Ohene Djan and Owusu-Ansah, 2020). Despite potential conflicts such as those arising from U.S which is aimed at limiting China's AI advancements, China seeks international engagement on AI regulation. This engagement was evident in China's participation in the AI Safety Summit in the UK and its endorsement of the Bletchley Declaration, which emphasizes human rights, transparency, fairness, and data protection in AI.

## 2. AFRICA'S CURRENT POSITION IN ARTIFICIAL INTELLIGENCE LANDSCAPE

Just like in other climes, AI is becoming popular in Africa. There are start-ups, researches, and innovation that are Afrocentric. In the current African environment, there is an increasing level of AI deployment. Sectors where AI has been employed include; healthcare, education, transportation, financial services, agriculture, public services, security and telecommunications. AI technologies are no longer described as dreams but are becoming a reality in Africa, though mainly driven by companies with roots in the West. In addition to the big technology companies establishing operations in Africa, home-grown experts are increasingly establishing technology spaces. These tech spaces and many African networks including local AI start-ups are fostering a growing ecosystem aimed at developing AI systems that are sensitive to African interests, concerns, and culture. AI innovations have the potential to contribute to economic growth and enhance security in Africa.

For instance, Aerobotics was founded in South Africa and through AI, contributes to improve agriculture on the Continent. The company provides farmers with a more integrated approach to farm management and crop protection through AI. It employs the drones and other robotics to track and access crop health, including recognizing sick trees, pest tracking and disease prevention and yield management analyses (Nanalyze, 2021). The Company has advanced its system by gathering and analyzing tree and fruit footages from farmers, providing them with independent and reliable output estimates and harvest timings. Farmers may then organize their inventory, estimate demand while ensuring that their consumers receive the best possible supply.

Aerobotics was selected as one of the 20 most promising African digital startups for the XL Africa residency, the flagship initiative of the World Bank Group's infoDev program which began in April 2016 (Nanalyze, 2021). Despite the laudable achievements made and great benefits these AI systems promise for Africa, there are challenges that undermine the adoption and implementation of AI across the Continent. The challenges facing the adoption of AI technologies in Africa include unreliable policy framework, inadequate skills acquisition, lack of structured data ecosystem, ethics, government policies, insufficient infrastructure and network connectivity as well as user attitude (Brenya, 2022). These difficulties have direct influence on African economic development. In order for African Continent to overcome it challenges, there is need for her to partner with developed nations in the global North and China in order to advance its AI opportunities.

### 2.1 China Artificial Intelligence in Africa

Governments and other actors across the world are competing more and more for political, economic and other strategic benefits associated with the development of AI (Bareis and Katzenbach, 2022). The last decade has witnessed the rivalry between China and other global North countries such as the U.S in the development and export of AI, particularly to African Countries (Li, 2021). Recently, China intensified her digital presence in Africa, becoming one of the key trade partners with the countries in the global South (Jenkins,2022). While many developed countries have manufactured and exported their AI to Africa over the years, China is playing a leading role in contemporary geopolitical competition of AI in the region (Zeng, 2021).

In Africa, AI from China and other countries around the world is positively impacting on infrastructure development and the construction of smart cities, minimising levels of crime and enhancing the safety of people, as well as improving education and skills development programmes, particularly after the COVID-19 pandemic era (Aggarwal, 2020; Roberts et al.,2021). Chinese AI offers unprecedented opportunities to all the economic sectors in African countries, providing technological solutions that avert climatic risks through real-time monitoring and forecasting. Chinese AI is also transforming the entire food systems value chain in most African countries by providing digital agricultural services, such as climate-related services including weather forecasting, procurement, e-commerce, finance and smart farming services (Liengpunsakul, 2021). Notwithstanding the benefits of the Chinese AI to socio-economic and political transformation in African states, the Continent is not fully ready to embrace and adapt this technology.

Many scholars and stakeholders; including the Team that authored this paper, have raised a range of concerns about the manner in which China is deploying and exploiting AI in African countries in ways that undermine national sovereignty and the key pillars of democracy (Feldstein, 2021). Between 2012 and 2017, Huawei and the Chinese government's intelligence collection were accused of hacking the Headquarters of the African Union (AU) which raised concerns of cybersecurity and undermining sovereignty in the Region. Therefore, such practices of exporting AI to Africa by the Chinese government and companies have instigated fears of widespread digital repression and colonisation. Recent scientific evidence has revealed several risks associated with importing Chinese AI, particularly to African countries (Layton,2020). It is thus imperative for African countries to ensure and enforce transparency and accountability mechanisms for AI companies, as well as permit parliamentary and public scrutiny of and oversight into contracting Chinese AI-related deals.

This underscores the need for Africa to develop capacity in the development of indigenous AI technologies while promoting home-grown digital solutions to mitigate overdependence on Chinese AI. Therefore, analysing the impact of the Chinese AI on the continent calls for regional states in Africa to design and implement policies that mutually benefit China and Africa and reduce the negative consequences of adopting this form of digital technology. This should also apply to AI solutions from other global countries and sources from outside Africa.

## 3. IMPACT OF ARTIFICIAL INTELLIGENCE IN WEST AFRICA SUB-REGION

The main African continental-level instrument with relevance to AU is the "AI for Africa Blueprint" developed in 2021 between the AU and SmartAfrica. It is an African AI strategy that outlines the opportunities and challenges of AI in the region and proposes key principles and pillars for inclusion in any continental and regional AI strategy. By outlining a framework for artificial intelligence in Africa, the Blueprint is a massive step forward by the AU towards rights-based regulation of AI with the aim of guaranteeing African AI sovereignty. At regional level, the Economic Community of West African States (ECOWAS) adopted the 2010 Supplementary Act on Personal Data Protection which is binding on the community's member states. AI initiatives in West African regions vary in scope and focus, but several notable projects and initiatives have emerged in recent years.

For instance, Kudi was founded in Lagos, Nigeria in 2016 by young entrepreneurs. "Kudi" is a local dialect in Nigeria that means "money," and it was ranked the first AI company in Africa (Nanalyze, 2021). Kudi collaborates with commercial banks and other financial service providers to deliver various financial products to small informal enterprises and individuals, such as deposits, loans, and insurance. The exciting aspect of this Fintech enterprise is introduction of AI Chatbot that enables customers to make financial transactions. In Ghana, Microsoft 2020 and Google 2019 launched AI laboratories to drive progress through meaningful innovation and action. Despite all this initiatives, there are barriers to implementing AI in West Africa. The most challenging impediment is the lack of fundamental and digital infrastructure, slowing down efforts to deploy AI. Other impediments include; lack of quality data, infrastructural challenges and lack a consistent supply of homegrown talent and professional AI developers.

## 4. CONTRIBUTION OF AIR FORCE RESEARCH AND DEVELOPMENT CENTER TOWARDS ADVANCEMENT OF ARTIFICIAL INTELLIGENCE IN NIGERIA

The Nigerian military has made significant effort towards the application of AI in enhancing its operations. The NAF recently established the Directorate of Artificial Intelligence at AFRDC. The primary purpose of its establishment is to conduct R&D aimed at promoting self-reliance in AI technologies as well as harness indigenous R&D efforts necessary to enhance NAF operations. At present, the Centre's AI experts are currently into design and integration of an autonomous flight algorithm for use in UAV systems. Other ongoing AI related R&D efforts include: AI-enabled high-end airborne command post solutions; long range airborne communication; AI-enabled telemetry algorithm; AI-enabled multi-sensor initial navigation system along with positioning and tracking packages. It is worthy of mention that the AFRDC AI Research Group is also involved with the conceptualization and design of AI techniques along with evolving implementation strategies for AI initiatives whilst open to collaboration with a broad spectrum of governments, academic/research centres and industries alike.

## 5. CONCLUSION AND SALIENT DEDUCTIONS

AI is on the verge of becoming central in the debate for transformational agenda, as seen in countries like the U.S, China and significant parts of Europe. African governments need to diversify their AI market by embracing investments from global North countries as well as home-grown solutions to mitigate the dominance of Chinese AI and others in Africa. It is important for Africa countries to harness the potential of AI in order to reduce poverty and also address health issues, transportation, agriculture, disability, food security, and other perennial problems confronting the Continent. This can be achieved with proper investment is made in AI, and the necessary environment is created for the survival of AI in Africa. AFRDC as a research hub in Nigeria is open to cooperation and collaborative initiatives towards the advancement of AI technologies in Nigeria in particular and Africa at large.

## REFERENCES

1. Adebomehin A. 2022. A Summary Analysis of China's Two Most Current Power Factors; National Academy for Political and Strategic Studies; Santiago – Chile; South America.
2. Abegunrin O. and Manyeruke C. 2020. Sino-Africa Relations: An Overview. China's Power in Africa: 9–25.
3. Chan, A., Okolo, C.T., Terner, Z. and Wang, A., 2021. The Limits of Global Inclusion in AI Development. arXiv preprint arXiv:2102.01265.
4. Gravett W.H. 2020. Digital coloniser? China and artificial intelligence in Africa. *Survival* 62(6):153–178.
5. Gwagwa A., Kraemer-Mbula E., Rizk N., Rutenberg I. and De Beer J. 2020. ArtificialIntelligence (AI) deployments in Africa: benefits, challenges and policy dimensions. The African Journal of Information and Communication 26: 1-28.
6. Haner J. and Garcia D. 2019. The artificial intelligence arms race: Trends and world leaders in autonomous weapons development. Global Policy 10(3): 331–337.
7. Kothari A. and Cruikshank S.A. 2022. Artificial Intelligence and Journalism: An Agenda for Journalism Research in Africa. African Journalism Studies 43(1): 17–33.
8. Wang R., Bar F. and Hong Y. 2020. ICT aid flows from China to African countries: A communication network perspective. International Journal of Communication 14(1): 1498–1523.