

ETHICAL IMPACTS OF ARTIFICIAL INTELLIGENCE ON SOCIAL CHANGE IN CONTEMPORARY AFRICA

Matthew Asemayina Dabu¹

Abstract

The world is growing faster than can ever be imagined with the advancement of artificial intelligence (AI). The development and deployment of AI have continually shaped individuals and societies across the globe by providing operational opportunities for effectiveness, efficiency and innovation. Despite the good things of life, the ethical impacts of these opportunities, human creativity has reached its breaking point as AI to a large extent is discriminatory, bias, does not protect fundamental human rights and dignity of individuals. The paper adopted qualitative research design. Findings show that AI is universally relevant, but the tendency to be unfair and highly biased to the developing societies is unprecedented as the evolving tension between protecting the public space and freedom of persons is not guaranteed when used at the national entry points, in the determination of criminal cases, in medical centres and selection of workers. The study concludes that AI must be developed and deployed with human dignity at its heart. It recommends that for the marginalised and technologically weak societies, efforts should be made to ingrain the cultural values of the peoples in the developed algorithms.

Keywords: Artificial Intelligence, social change, transparency, accountability, human rights, Nigeria.

Introduction

Human development comes with both wings; the wings of blessings and curses. The world of Artificial Intelligence is no exception to this trajectory. The attendant blessings of Artificial Intelligence are enormous and nearly touching every walk of life. There are situations where AI has facilitated human relationships, enhance governance opportunities, contributed immensely to making criminal justice faster and objective. The medical practices, AI is

^{1.} Dr. Matthew Asemayina Dabu is of the Anointed Truth and Life Christian Ministry Incorporated, West Sydney-Australia.

doing a lot of wonders. The target of this paper is the social change that human work beings to bear on job performance and job satisfaction. The idea of dignity in labour goes beyond getting food for the survival of the human species. It involves providing time for human care, creativity and deeper human relationship for personal growth.

The architectural giants of the world such as Google DeepMind CEO Demis Hassabis, OpenAI CEO Sam Altman, and xAI CEO Elon Musk are standing on their feet to ensure that they gift to the world is not causing more harm than the good they envisioned. This means a lot to the world desirous to inculcate ethical values in human conduct especially in relation to the work individuals do on a daily basis to satisfy the material needs of human beings. There is always a deep feeling that the world is at the brink of collapse not because there is no longer scientific and technological advancements, but as a result of the wickedness of a few elites in our world.

Artificial Intelligence is one of the most cutting-edge technologies of the 21st century. Its global usefulness is achievable only if the development of AI recognises African cultural values, beliefs and ethical principles of the end users. This is the problem of development and deployment of AI in Africa. This resolve does not preclude the ability of innovators from building appropriate ethical vision that can serve as guide actions for a future that will be driven by an unprecedented technological and scientific progress. The call to examine the ethical impact of AI on social change in contemporary African society is geared towards making history. It is understandable that scientists and technologists working on AI are not resting on the advancing the outcomes of the world of AI.

It becomes imperative for researchers on ethics of AI to make unrelenting progress that goes well ahead of any moral or ethical degeneration with the use of AI. The pessimism that ethicists are truly finding it very difficult to fine tune their ethical lens to meet new discoveries and innovations associated with AI must be discarded with alacrity. Ethicists dealing with AI should face the reality that the evolving AI is set not to dehumanise any individual across the globe but to enhance humanity. The acceptability of AI in Africa does not provide the end users with enough time to think that developers in the West are using Africans as a means to an end, rather than an end in itself. The knowledge of abuse can only come from researchers with critical ethical orientation. This is a task that is very important in the 21st century.

Everyone is watching thoughtfully to examine the ethical impact of AI which is reshaping the world much more than the outcome of the industrial revolution in Great Britain. No wonder, Pope Francis referred to the era of AI as a “cognitive industrial revolution”. Every industrial revolution brings with it a mentality that is ill-disposed to human beings that are vulnerable. It will be absurd if humanity with its reflective and consciousness refuses to learn from the past mistakes of others. Today, as the world is celebrating AI in all aspects of human endeavour, it is important to the innovators and their beneficiaries to prioritise the dignity of human beings much more than weighing the efficacy, effectiveness and reliability that comes with the new products of AI.

Conceptualising Ethics

Ethics comes from the Greek word *εθικος*, meaning “character”. This idea of character becomes relevant and most fundamental to an individual because it is formed from human habit. The human habit

is a derivative of the Latin word *mores* which is interpreted to mean customs. When an individual acts consistently for a given period, such actions become a habit and after several years it becomes customary for the individuals. Habit is associated with the second nature of every human person or organisation. The background information does not show that ethics has a universal definition. Ethics is highly subjective or relative. It is customary to an individual or groups. Broadly, ethics is “the science of right and wrong”.² This description is based on well-founded standards of right and wrong that prescribe what humans ought to do, usually in terms of rights, obligations, benefits to society, fairness and specific virtues. This makes the role of ethics fundamental to the deployment of Artificial Intelligence as what is ethical in the U.S, is not so in Africa, but the human being who makes use of AI in Africa is not different from the one in US and London, China and Australia.

Defining Artificial Intelligence

What is artificial intelligence? Cole Stryker and Eda Kavlakoglu define AI as “Technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy”.³ It is based on the definition of AI that Abejide Ade-Ibijola came up with a clearer explanation of the things AI does when applications and devices are equipped with AI. For Abejide, Artificial Intelligence is “A group of technologies that enable machines to think, sense, understand and

². Manuel Velasquez, Claire Andre, Thomas Shanks, S.J., and Michael J. Meyer “What is Ethics?” Markkula Center for Applied Ethics (Fall 1987) Revised Jan 1, 2010: 623 – 635. <https://www.scu.edu/ethics/ethics-resources/ethical-decision-making/what-is-ethics/>

³. Cole Stryker and Eda Kavlakoglu. What is artificial intelligence? IBM. <https://www.ibm.com/think/topics/artificial-intelligence>

behave like humans”.⁴ There is no need to give up on the definition of AI because no definition has the potential to be universalised. Jess Wittlestone *et al*⁵ define AI as “any technology that performs tasks that might be considered intelligent – while recognising that our beliefs about what counts as 'intelligent' may change overtime, In this sense, it means that what is considered as AI has the ability to improve productivity, public services and effectiveness and efficiency of thinking, of operations, allocation of resources and boost performance in businesses and institutions. However, in contemporary society, the emphasis is on generative AI which is a technology with the ability to create original text, images, video and other contents using tools like machine learning and deep learning.

Conceptualising Social Change

There is a universal truism that says the only permanent thing in life is change. There are people who do not believe in change. The conservatives prefer to remain irreversible under whatever circumstances. Change is heavily measured based on subjective perception of an individual rather than the collective impact of an action. Social change is defined as “the transformation of a society's fundamental structures, behaviours, values and institutions over time. It involves a shift from cultural norms, social relationships due to advancement of science, technology, and new ideas. The arrival of AI has brought attendant social changes ranging from institutional transformation such as changes in government, types of education, legal systems, and family structures.

⁴. AI in Africa: Emerging Challenges | SpringerLink

⁵. Jess Whittlestone, Rune Nyrop, Anna Alexandrova, Kanta Dihal and Stephen Cave, “Ethical and societal Implications of Algorithms, Data, and Artificial Intelligence: A Roadmap for Research”. *Leverhulme Centre for the Future of Intelligence*. University of Cambridge.

The Fourth Industrial Revolution is basically a digital revolution which has introduced a shift in behaviours and norms by way of interacting, dressing, communicating with others. There is a firm evolution of values on civil rights, gender roles or the rising influence of environmentalism. Other social changes may come about as a result of cultural evolution or conflicts or new philosophies of life, but in our days, it is based on technological advancement through the Internet or Artificial Intelligence AI. Today, the increasingly rise in the use of the internet and smartphones has changed the way of doing business, social interaction and human attitudes and human relationship in general.

Benefits of Deploying AI in Africa

There are so many benefits that come with the deployment of AI in the life of an individual, organisation, group, society, and nation around the globe. It is a known fact of life that wherever AI is applied, it brings about a revolutionary integral change in the lives of the people through the change in the way of thinking, acting and resolving complex problems in a given environment and societies. AI is always a victorious gladiator that provides automated systems which helps to streamline processes and reduce manual error to the barest minimal. There is organisation that inhales the deployment of AI and still remains the same. One good advantage of AI is its ability to provide real-time analytics for economic, legal, war, agriculture and allied purposes, health-care, and for Nigeria it has the potential to provide knowledge on how technology can prevent cybercrime, insurgency and terrorism.

Africa has remained an agrarian continent and whenever mention is made of AI, the first thing that comes to mind is how AI is useful to

agriculture. Melody Musoni speaks of “digital agriculture”⁶ whose AI-powered mobile apps are able to provide smallholder farmer with precise, localised weather forecasts and allow them to diagnose crop disease simply by taking a picture, transforming traditional farming practices. Larger farmers are using AI-powered tools like drones and satellite imagery to monitor crop health and optimise irrigation and fertilisation. In a summary, there is a wider scholarship that captures the benefits of AI around the globe. A glean of the available literature will suffice for this study. Fredrick Ochieng captures it thus: “AI is already reshaping the future of Africa. AI is providing solutions to Africa's major social, economic and environmental challenges, from the health sector to education and agriculture”.⁷ AI is a strategic tool for achieving the Sustainable Development Goals (SDGs). According to Paulin Melatagia AI is being used for:

Predicting epidemics and floods, providing automated diagnoses via medical imaging, detecting diseases from images of plants or skin, automating learner assessments, and more. These AI use cases are already providing solutions to compensate for the lack of human resources in fields like health, agriculture and education in Africa. At the same time, they are helping to improve yields and boost productivity.⁸

A patient goes to a medical practitioner as a sick person. If the

^{6.} Chloe Teevan, Melody Musoni and Jonathan Hunter, “AI in Africa: How are Africans using AI to accelerate development?” Retrieved from <https://ecdpm.org/work/ai-africa-how-are-africans-using-ai-accelerate-development>. 18/01/2026.

^{7.} Fredrick Ochieng. Cultural Video Production Limited

^{8.} Paulin Melatagia. *L'Economie africaine*. AFD Publication

situation had presented itself three decades ago, the picture would have been that of a medical doctor seated behind a simple table. A stethoscope hung over the neck, two visitors' chairs, one for the sick person and the other for the care giver who could also interpret what the sick person is complaining of in local language. The medical doctor would have been involved more with the use of his brain to question the sick person and the responses would have been used to match the past experiences the medical doctor had with other patients with similar diagnosis. This was how many years of experience facilitated the administration of medicine. A lot of energy was put to use to get to the interpretation of symptoms and feelings of the sick to get the right diagnosis and prescription to get the patient well.

Conversely, a health facility with the state of the art in AI, it will take the medical doctor less than thirty (30) minutes to complete the process of diagnosing, prescribing, dispensing and treating the patient from start to finish with the help of AI. A great deal of energy is conserved at a very less financial and time cost. Medical practitioners in their consulting rooms are forever depending on their hand phones for diagnosis and prescriptions. is met with a lot of challenges even though it has the potential to change the African societies in diverse ways including social, political, religious, economic and security wise. This study has brought out many of the benefits of AI to Africa, it is not yet uhuru for countries in Africa.

Challenges of the Deployment of AI in Africa

The greatest of all the challenges facing AI in Africa is the inability to develop it. The land of Africa is known for consuming the things their people are not able to produce, such as computers, phones, ammunitions, cars, motorbikes and tricycles and most recently

drones, aeroplanes, ships, and industrial machines just to name a few. The things that are produced in Africa are things that are hardly consumed in their raw state such as lithium, crude oil, cocoa, and many mineral resources. This is the trend the deployment and possibly the application of AI has followed in most countries if not all the nations in Africa. The increasing craze for AI use in Africa is unprecedented and can be likened to the approach the use of automobiles took earlier on. This is not a matter of being pessimistic about the future of Africa. It is a reality that should be confronted headlong if “the algorithmic colonisation of Africa”⁹ is to be avoided.

At the moment there appear to be few attempts at building home-made automobiles in a country like Nigeria with Innoson Vehicle Manufacturing (IVM) leading the way as the first Nigeria's indigenous vehicle manufacturer where sedans, SUVs, pick-ups and buses are produced. The others automobile plants are merely for the purposes of assembling already manufactured parts. Africans are overdependent on foreign cars, albeit used cars. The prayer is that the attitude over dependence on used automobiles should not be extended to AI. This takes this study to the challenges the use of AI face in Africa.

Abejide¹⁰ has identify the seven (7) challenges facing the users of AI; the need to learn new skills in a short time, uncertainty for the future, absence of a structured data environment, absence of appropriate government policies, ethics, insufficient network

⁹. Abeba Birhane, (2020). “Algorithmic Colonisation of Africa.” Scripted: A Journal of Law, Technology, & Society 17(2), 2020. Available at: <https://script-ed.org/article/algorithmic-colonisation-of-africa/>

¹⁰. Abejide Ade-Ibijola. “[AI in Africa: Emerging Challenges](#)”. SpringerLink

connectivity and infrastructure the development of user attitudes. Kiemde and Kora¹¹ in two separate studies have added the following challenges; lack of digital infrastructure, education, inadequate data, public policies and funding. Ekeh *et al* bring out overlapping factors as challenges Africa faces in the adoption of AI. These challenges include;

Having a local workforce with the required training to develop these solutions, sufficient infrastructural capacity to handle the computationally-heavy training of algorithms, representative datasets, governmental support and regulation to govern the appropriate fair use of these technologies, independent and civil institutions and policymakers that safeguard from harmful applications and reinforce responsibility and accountability.¹²

Another challenge faced by users of AI in Africa is the inability to draw on local content. There are very few engineers in Africa with the ability to design applications that can bring about new forms of AI. The challenge becomes devastating as even the few engineers are ever ready to move out of the continent for greener pastures. The highly patriotic engineers and technologists who stay behind do not have the required specialist training to improve their knowledge on the development of AI. Most governments in Africa are no longer interested in training their technocrats outside their home countries

^{11.} Kiemde, S.M.A., Kora, A.D., 2021. Towards an ethics of AI in Africa: rule of education. *AI Ethics*.<https://doi.org/10.1007/s43681-021-00106-8>; Kiemde, S. M. A., & Kora, A. D. (2020). The challenges facing the development of AI in Africa. In 2020 IEEE International Conference on Advent Trends in Multidisciplinary Research and Innovation (ICATMRI), pp. 1–6. IEEE

^{12.} Eke *et al.* (eds.), *Responsible AI in Africa, Social and Cultural Studies of Robots and AI*, https://doi.org/10.1007/978-3-031-08215-3_3.

to get the required expertise and the experience to return home and help reshape Africa.

The most disturbing issue concerning the application of AI is the surrounding controversy concerning the management of the tax data in Nigeria by a French corporation, *Direction Générale des Finances Publiques* (DGFIP) is threefold. It is the problem of accountability, transparency and explicability. When discussing the accountability challenge, it is important to be reminded about the Nigerian context. The question to ask is who is accountable in Nigeria? Is it the executive, the legislature or judiciary? One can argue that the partnership between the French Corporation and National Revenue Service will be guided by Nigerian laws on data protection. This point is not strong enough to throw in the wet towel. The fact is getting tax data to enable effective analysis of taxes in Nigeria; the French company definitely needs full and comprehensive grasp of tax data in Nigeria.

The part that destroys the argument of accountability is that the current AI algorithms created by these foreign companies are into black boxes which is often very difficult to unmask and decode them to understand what and why the system did what it did. Even if Nigerians as end-users suspect foul play its beautiful data laws put in by available policies to regulate the applications can yield no good result. The answer is very simple, lack of expertise on the side of Nigerian engineers in the area of AI. Someone can argue that there are Nigerian engineers who have expertise to audit the system if the need arises, but the issue of who has the time to listen to such query from Nigerians? The inability to provide plausible responses to these identify challenges makes the fear of taking of the Nigerian sovereignty by France more realistic. This was the fear of Professor

Paulin Melatagia Yonta who warned the whole of Africa that: “Whoever controls the data will control the future”.¹³ He goes further to add: “As long as international technology corporations hold a monopoly over African data, the continent will never be independent”.¹⁴ This new perspective should not be taken for granted especially by countries in Africa.

Open Opportunities for Africa

The land of Africa holds the youngest growing population, the fastest growing cities, essential critical minerals and the most abundant renewable potential on the planet. It is with this demographic strength, green power and digital ambition that if properly put to use will correct the wrong historical narrative of Africa. It will also address the lingering structural inequalities that are associated with the poor performance of the continent in the area of development. Great initiatives in Africa must choose appropriate Graphics Processing Units. This calls for change of policy on training. The old policy of teaching the Africa to serve as secretary to colonialists has to be dropped. The capacity of the Africa should be enhanced to be able to develop Graphics Processing Units. Nigeria and Kenya have scientists that can be trained to build and not just assemble GPU systems. Trainings in AI should focus on manufacturing the components of the hardware so that with time African countries can be reckon as producers of African AI systems and datasets to address identify local challenges instead of building their capacity to encourage local startups.

The researchers in various universities in Africa have the required intelligence to change the whole narrative of Africa as the producer

^{13.} Paulin Melatagia Yonta, *L'Économie africaine. AFD Publication*

^{14.} Paulin Melatagia Yonta, *L'Économie africaine. AFD Publication*

of essential raw materials to a producer of finish AI gadgets by AI local talents. The products should be capable of producing homegrown solutions which can facilitate agriculture, health and education. What is needed is encouragement from government, private sector and civil society organisations some of which are already working on it is adequate funding. Audrey Azoulay, UNESCO Director¹⁵ General explains that “the United Nations Educational, Scientific and Cultural Organisation (UNESCO) through SPAARK-AI Alliance is to train more than 15,000 civil servants in the use of AI and train 5,000 judges and prosecutors”, such efforts cannot change the old narrative for countries in Africa. A radical shift is needed by African researchers who must be willing to vigorously train young scientist on AI skills.

AI computing system in Africa must be supported by governments through the provision of adequate funding for the building of the capacity of scientists and technologists to effective at local collection of data and its local storage while relying on renewable energy sources. The success of digital economy established by the Ministry of digital and blue economy depends on the building of young talents with moral rectitude to remain within the countries of Africa to anchor the desired innovation that can serve real development needs in Africa.

There is no doubt about Nigeria's ability and capacity to build what is contextually needed in the country, the problem is who the young scientists are ready to build their capacity for. If Nigerians build their capacity for Nigerians, then stories of building data centres

¹⁵. Audrey Azoulay “AI in Africa: UNESCO unveils new solutions for its development at the G20” Retrieved from <https://www.unesco.org/en/articles/ai-africa-unesco-unveils-new-solutions-its-development-g20>.

will put to an end the lack of needed data to resolve biases that comes with the installation of western built devices. One of the greatest challenges the deployment of AI in most African countries face is data centres. No matter how high Nigeria is in the AI ecosystem, it lacks a well-defined data centre with high-performance computing capacities to process massive datasets. It is even difficult to determine how many university students are in Nigeria despite the fact that every Nigerian student has a bank account, an email address, a matriculation number and had sat for Unified Tertiary Matriculation Examination (UTME). The absence of large datasets makes it very difficult for an engineer who is trained on data from elsewhere to perform well on scanty and confused data in Africa. Most importantly, governments at all tiers of government should establish regulations that promote ethical AI use, protect data privacy and ensure equitable access to AI technologies.

Ethical Impacts of AI on Social Change

AI is wholly a scientific enterprise. Why is ethics so important to the development, deployment and adoption of AI in contemporary society? The answer is not far-fetched especially as the use of AI is not limited to an individual person. No one engages in the use of AI as an isolated individual. When used for the purpose of communication, it matters because communication in itself is a double-edged sword. It becomes meaningful if the message sent out returns with feedback. The outcome of the encoder and decoder is to ensure that society benefits more from any interaction with conscientiousness of heart on whose values have been impacted upon in this paper. Objectively, there is a tendency to promote African cultural values (the Global South) in the search to make use of AI to the detriment of the European values (the Global North). Can the idea of bringing collectivism in utilising AI, threaten the

European philosophy that is based on individualism? This question is a hard nut to crack as far as AI is concerned.

However, “research provided the best practice on how research concerning ethics and values should be conducted as to provide guide to the development and use of AI technologies for all men to endeavour to uphold in contemporary society”.¹⁶ These ethical values can be universalised for the benefits of the Global North and Global South. They are; accountability, beneficence, non-maleficence, autonomy, justice, and explicability. The change in meaning due to the application of AI is based on possible assumptions and the knowledge gaps of those who are involved with the development and production. The collection of right data with benefits of concrete knowledge and substantial evidence will provide objective benefits rather than harm to any user. The realisation of diverse perspectives and the feasibility of technology will go a long way making room for available trade-offs that exist among different groups in contemporary society.

Concluding Remarks

It is imperative to declare that AI is universally relevant, but the tendency to be unfair and highly biased especially to the end users in the developing societies is unprecedented. This in addition to the evolving tension between protecting the public space and unguaranteed freedom of persons in the developing world. This calls for deeper understanding the ethical impact of AI on social change in contemporary society particularly in the determination of criminal cases, in health facilities and schools. Inevitably, AI does

¹⁶. www.partnershiponai.org/tenets/. The Leverhulme Centre for the Future of Intelligence, at which the authors of this report are based, is a member of the partnership on AI.

not tie one to issues of governance alone, but makes provision for easy living for all. It is a clarion call for a deeper understanding of assumptions about how effective society makes use of the increasing presence of science, technology and society in the face of tensions and conflicts of interests among end users. The development and deployment of AI must be done with respect for human rights and dignity at heart. It is significant to give credit to clear-cut governance frameworks on ethics that are capable of fostering the growth of local expertise such as electricians, digital plumbers and AI technicians whose moral consciousness is build and enhanced by continuous in-house training.

If the welfare and wellbeing of men and women with such capacities are sustained, the syndrome of brain drain would become history. The fear of losing national sovereignty would not arise. Nigerian leaders would prefer to use indigenous experts on tax matters to improve tax rather than partnering with France under highly questionable circumstances. The deal will clearly be carried out ethically and Nigerians would heavily benefit from the partnership. This will be so because Nigerians would be in control the infrastructure. There will be overlapping benefits from economics, education, finance, agriculture and security.

The paper strongly recommends that for the marginalised and technologically weak societies, efforts should be made to ingrain the cultural values of the peoples in the developed algorithms in such a manner that the creation of AI will be powered by African intellectuals in African higher institutions, for the purpose of serving African who are struggling to live better lives in the face of harsh policies. Every effort should be made to duplicate the model in which Nigeria and Kenya are collaborating with UNDP on the

project “Planetary Intelligence” to link carbon tracking, renewable energy integration and data monitoring. The role universities in Africa can play to effectively transform the AI ecosystem is basically to train the right skills that would in turn build systems that are compliant to cultural values and intended to gain high level of accountability, transparency and contribute to African Artificial Intelligence for effective development of Africa.