

Artificial Intelligence in Governance: A Path to Efficient Public Service Delivery in Nigeria

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Abstract

The adoption of AI in governance has the potential to improve service delivery and fraud detection in Nigeria. The study assessed Artificial Intelligence in Governance: A path to efficient public service delivery in Nigeria. This study was entirely qualitative in nature; that relied on remote interview also called online interview – web-based interview. Secondary data corroborated the data generated from interview. The data generated from the aforementioned sources were thematically analysed. The study found that that the adoption of Artificial Intelligence in Governance has promoted on the speed of public service delivery in Nigerian agencies. Some of several ways where AI has promoted on the speed of public service delivery in Nigerian agencies include automation, predictive analytics etc. On objective II and proposition II, the study found that the adoption of Artificial Intelligence in Governance has promoted fraud detection in Nigerian agencies e.g. AI systems has helped in identifying patterns of fraudulent activity, such usual transaction patterns or data discrepancies. The study recommended among others the need to establish standards and protocols for the use of AI in government services that can help to ensure that AI systems are interoperated and integrated with existing systems and processes. Finally, the study also recommended the need for the agencies to share data and information on fraudulent activities, allowing AI systems to learn from a larger pool of data and identify patterns more accurately.

Keywords: Agencies, Artificial Intelligence; Fraud, Governance and Public Service.

Introduction

In the present-day, the fast evolution of Artificial Intelligence (AI) technologies stands as a transformative force across numerous sectors and industries on a global scale. Nations with growing economies, exemplified by Nigeria, are gradually recognizing the many benefits that AI promises for refining public services, catalysing economic development and ameliorating societal welfare (Floridi, 2020). The attraction and noticeable advantages of AI have prompted these nations to embrace AI technologies eagerly, aiming to foster

innovation and augment their competitive edge on the international stage. The influence of AI cannot be overemphasized. On July 20, 2017, the Chinese government released a strategy detailing its plan to take the lead in AI by 2030. Less than two months later Vladimir (2017) publicly announced Russia's intent to pursue AI technologies, stating, "Whoever becomes the leader in this sphere [AI], will become the ruler of the world" (Daisuke and Shane, 2018).

Needless to say that the field of AI research began in the 1940s, but an explosion of

interest in AI began around 2010 due to the convergence of three enabling developments: (1) the availability of “big data” sources, (2) improvements to machine learning approaches, and (3) increases in computer processing power (report of National Joint Artificial Intelligence Center, 2021). This growth has advanced the state of Narrow AI, which refers to algorithms that address specific problem sets like game playing, image recognition, and navigation. All current AI systems fall into the Narrow AI category (Allen, 2020). Experts generally agree that AI which refers to systems capable of human-level intelligence across a broad range of tasks (O’Brien, 2019).

Nigeria government has initiated a plethora of measures to promote development and assimilation of AI across various sectors such as healthcare, agriculture etc. Concurrently, the Nigerian technological ecosystem is experiencing an exceptional boom in AI startups and research endeavours (Ajibad and Onovakpuri, 2020). Nonetheless, the rapid deployment of AI technologies is not devoid of ethical dilemmas. Issues pertaining to privacy, bias, accountability, and transparency have engendered considerable scepticism towards the integration of AI in governance. On the positive dimension, Governments believe that by instituting well-defined guidelines and principles for the ethical development and deployment of AI in governance, nations can effectively mitigate potential risks and bolster societal trust in these technologies (Biniok and Maedche, 2019). In Nigeria, where regulatory framework for AI is still in its early stages and the adoption and development of AI technologies are somewhat at their lower level, there's a profound interest from the government in leveraging AI to stimulate efficient public service delivery. The government is placing a high priority on proper standards in the

development of AI in governance that can champion fairness, equity, and transparency in governance and administration that can ensure efficient public service delivery thereby nurturing a broader public acceptance and trust (Nigeria Ministry of Information Technology and Communications, 2019). It is against this background that the study assessed Artificial Intelligence in Governance: A path to efficient public service delivery in Nigeria with particular focus to Federal Ministry of Communication and Digital Economy and National Information Technology Development Agency (NITDA); the rationale behind the choice of the ministry and the agency lies on the fact that they are responsible for developing policies and initiatives to promote the use of digital technology in Nigeria including the use of AI.

Statement of the Problem

Artificial intelligence (AI) is one of the most debated and, apparently, one of the least understood technological breakthroughs of our time. It both fascinates and frightens at the same time. It fascinates by its potential, observable already in its everyday use and in the determination of the great powers to assert their superiority in this field. It also often worries people because further progress may lead to overcoming human capacities. AI has become a “hype” word whose impact is sometimes seen as overly optimistic or even esoteric. Therefore, it is necessary to analyse this technology's development trends and anticipate its full impact on our societies and lives (Report of Public Broadcasting Service, 2016).

In Nigeria, the application of artificial intelligence (AI) in the Intelligence services has had a significant impact. AI has been used to improve data analysis, pattern recognition, and decisionmaking, leading to

efficient public service delivery in Nigeria. However, there are concerns about the potential misuse of AI, as well as the potential for bias in the data that is used to train AI systems for efficient service delivery in both intra-governmental (i.e. within government agencies to improve efficiency, transparency, and decision-making e.g. using AI for data analysis, fraud detection, speedy transference of information and policy formulation) and inter-governmental affairs (i.e. the use of AI to facilitate communication and collaboration between different government agencies or between government and other stakeholders, such as citizens or private sector organizations. Examples include using AI for cross-agency data sharing or to improve communication between government and citizens) (Report of Public Broadcasting Service, 2016).

Additionally, there are concerns about the potential for AI to be hacked or manipulated, which could have serious consequences in hindering service delivery. For example, AI algorithms are trained on data, which can reflect biases in the data itself. If the data used to train the AI is biased, the resulting algorithms can also be biased. This is always the case in Nigeria; as most algorithms used for credit scoring on data on certain demographics are biased which in most cases result in unfair outcomes for people not well-represented in the data leading to favouring small part at the detriment of the majority – which is more like fraud (National Artificial Intelligence Policy and Strategy, 2021). It is against these stated problems that the study assessed Artificial Intelligence in Governance as a path to efficient public service delivery in Nigeria.

Research Objectives

The purpose of the study is to assess Artificial Intelligence in Governance as a path to efficient public service delivery in

Nigeria. The specific objectives of the study include the following:

- i. To explore how Artificial Intelligence in Governance promoted the speed of public service delivery in Nigerian agencies.
- ii. To describe how Artificial Intelligence in Governance promoted fraud detection in Nigerian agencies.

Research Propositions

P01 Artificial Intelligence in Governance has not promoted the speed of public service delivery in Nigerian agencies

P02 Artificial Intelligence in Governance has not promoted fraud detection in Nigerian agencies

Conceptual Review

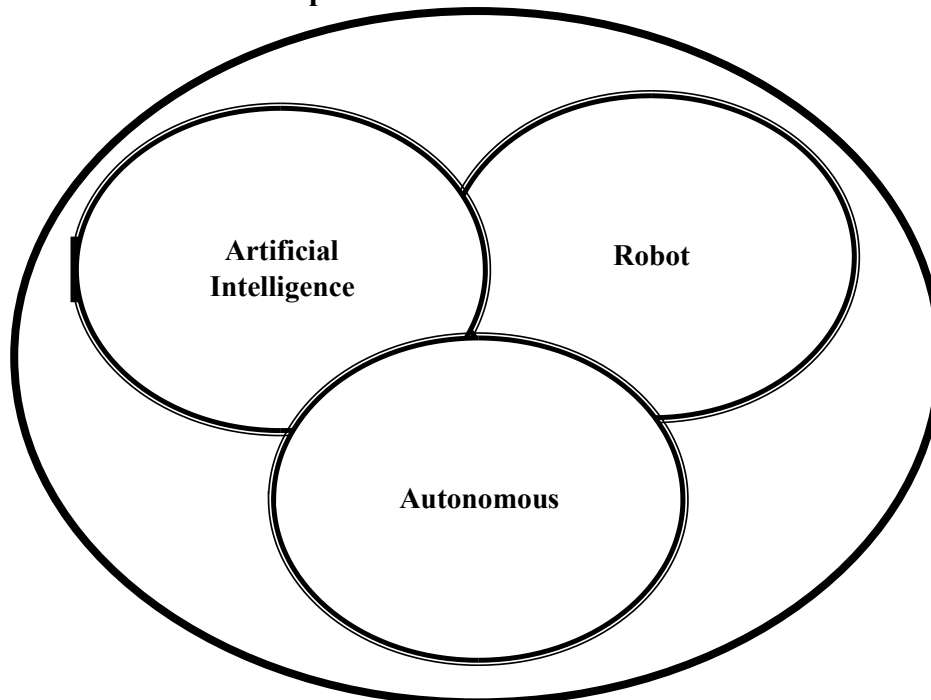
Artificial Intelligence (AI)

Almost all academic studies in artificial intelligence acknowledge that no commonly accepted definition of AI exists, in part because of the diverse approaches to research in the field. AI is a concept, or better, a field, encompassing “logic, probability, and continuous mathematics; perception, reasoning, learning, and action” (Russell and Norvig, 2013, p. vii). Likewise, although Section 238 of the National Defense Authorization Act [NDAA] (2019) directs the Secretary of Defense to produce a definition of artificial intelligence. The NDAA (2019) does, however, provide a definition of AI for the purposes of Section 238:

- Any artificial system that performs tasks under varying and unpredictable circumstances without significant human oversight, or that can learn from experience and improve performance when exposed to data sets.
- An artificial system developed in computer software, physical hardware,

- or other context that solves tasks requiring human-like perception, cognition, planning, learning, communication, or physical action.
- An artificial system designed to think or act like a human, including cognitive architectures and neural networks.
 - A set of techniques, including machine learning that is designed to approximate a cognitive task.
 - An artificial system designed to act rationally, including an intelligent software agent or embodied robot that achieves goals using perception, planning, reasoning, learning, communicating, decision-making, and acting (Defense Innovation Board (DIB), 2019).

Figure I Relationships of Selected AI Definitions



Source: Concept for Robotic and Autonomous Systems, 2017, p. A-3.

Therefore, in describing AI as an entity, it is more precise to call it an “intelligent agent”. In that sense, AI is “the study of agents that receive precepts from the environment and perform actions” (Russell and Norvig, 2013). In the same vein, Andrews, (2018) defines AI simply as technology that emulates human performance, typically by learning from it. To be more descriptive, AI makes it actionable for machines to “learn” from “experience”, adjusting to new inputs, and perform human-like tasks. Multiple new

technologies have become broadly categorised under the label

Artificial Intelligence. Most AI applications today rely heavily on their subfields, Machine Learning (ML) and Deep Learning (DL), to name some of them. These technologies allow computers to be “trained” to accomplish specific tasks by processing large amounts of data and recognising patterns (Andrews, 2018).

OECD defines AI “as the ability of machines and systems to gain and apply knowledge and to carry out intelligent behaviour” (OECD, 2016, p. 86). When it comes to knowledge, AI, at the current level of development, can gain and apply but cannot transfer its knowledge. The most comprehensive definition that provides a description of AI capability and its purpose in augmenting and assisting human capabilities is the one given by Teradata’s “State of Artificial Intelligence for Enterprises” report 2016 cited in Bourne, (2017), as:

The ability to automate enterprise decisioning using human to machine cognitive interactions where machines are able to augment and assist human capabilities by sensing and continuously learning, reasoning and inferring, and deciding and acting to drive a business outcome (p. 3).

Finally, defining AI technology in relation to defense. The U.S. Department of Defense describes AI as “the ability of machines to perform tasks that normally require human intelligence – for example, recognizing patterns, learning from experience, drawing conclusions, making predictions, or taking action – whether digitally or as the smart software behind autonomous physical systems” (USA DoD, 2018, p. 5).

Service Delivery

According to McLennan (2009) service delivery is commonly understood to mean “the provision of goods or services by a government or other organizations to those who need or demand them”. Such delivery of services by whoever is constitutionally responsible takes into consideration numerous social factors. This includes

evenly rearrangement and reallocation of resources, social equality, and improvement of people’s living condition and stimulating economy to ensure service provision sustainability.

Berry (2014) opines that service delivery is conceptualized as the relationship between policy makers, service providers and poor people. It encompasses services and their supporting systems that are typically regarded as a state responsibility. These include social services (primary education and basic health services), infrastructure (water and sanitation, roads and bridges) and services that promote personal security (justice, police). Similarly, World Bank (2004) sees service delivery as:

A relationship of accountability between users, providers and policy-makers and proposes a possible framework for conceptualising pro-poor service delivery that examines the relationships of accountability between the policy maker, the provider and the citizen – indicating the central role of the public institutions in guaranteeing the provision of pro-poor services and the role of politics in this process.

VNG International (2017) opines that service delivery is an essential function of the relationship between government bodies and citizens. This has over the years, categorised the citizens as customers and has changes the way governments think and act. In the world of government therefore, (particular, in the

world of local government) customers have a right to demand services from their suppliers that meet their needs: fast, accessible, of good quality and at modest cost, and all wrapped in friendly treatment. This applies particularly to the government as a supplier of key public services. However, since the study constrained service delivery within the confines of primary health care delivery, the need to conceptualize primary health care. Amaresh, (2020), posits, Service Delivery to imply tangible and intangible goods and services provided by the government in order to improve the wellbeing of the citizenry. These include social services (primary education and basic health services), infrastructure (water, sanitation, roads and bridges). Agba (2022) quoted in Agba (2023), agree with this understanding of Service Delivery when they noted that local service delivery is the provision of services intended to alleviate human suffering and by extension, enhance the quality of life of the citizens.

AI and Service Delivery

According to McKinsey and Company (2020), there are several aspects of service delivery that can be improved with the introduction of AI:

- **Speed and Efficiency:** AI can help automate routine tasks, allowing government agencies to process applications and requests more quickly, reducing the time and resources required for these processes.
- **Fraud Detection:** AI can help identify patterns of fraud or corruption in government services, leading to more efficient and transparent service delivery.
- **Accuracy:** AI can help reduce human error and increase accuracy in data collection, analysis, and decision-making, leading to more reliable and consistent service delivery.

- **Personalization:** AI can analyze data on citizens' interactions with government services and provide personalized recommendations or advice, leading to a more tailored and responsive service delivery experience.
- **Accessibility:** AI can help government agencies provide more accessible services, for example by offering chatbots or virtual assistants that can provide information and assistance to citizens with disabilities.

Theoretical Base: Technology Acceptance Model (TAM) By Davis (1989)

According to the proponent of the theory, "a user or an industry is presented with a new technology, a number of factors influence their decisions regarding how and when they will use it. The key innovation characteristics, notably Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are widely used within the adoption approach that builds on Technology Acceptance Model (TAM). To this end, the following definitions for PU and PEOU are given (Gibbs 2007).

While Perceived Usefulness (PU) refers to the degree to which a person believes that using a particular system would enhance his or her job performance in an organization; Perceived Ease of Use (PEOU) is the degree to which a person believes that using a particular system would be free of effort and energy wastage. According to Forman and Goldfarb (2006), TAM has proven to be a robust model that is frequently used to study user acceptance of ICT. It is widely viewed as an information system theory which helps to understand the adoption and use of internet (Gibbs 2007 and Davis 1989). The theory helps to understand how adopters come to accept or reject the use of ICT in dealing with life challenges.

Methodology

Research Design

This study was entirely qualitative in nature. Qualitative research worked out under the use of observations, interviews, and document reviews or combination of all. The main focus in qualitative research is to understand, explain, explore, discover and clarify situations, feelings, perceptions, attitudes, values, beliefs and experiences of a group of people (Kumar, 2011). This definition implies that data and meaning emerge “organically” from the research context.

Population and Sampling of the Study

The target population for this study includes the staff of Federal Ministry of Communications, Innovations and Digital Economy. They include among others the Ag. Director, ICT, Head of ICT Department, Head of Data Centre/Network Management Branch, Head of e-Government Solution Branch, and two (2) other staff from Database Management Unit (<https://fmcide.gov.ng>). The population also include two (2) key staff of National Information Technology Development Agency (NITDA)

Purposive and snowball sampling techniques were used in the course of this study. The purposive sampling technique was used to select principal staff. The rationale for the use of purposive sampling, lies on the need to recruit or determine beneficiaries or participants who provides additional in-depth and in-house information about the phenomenon under investigation. Snowball sampling technique played a second fiddle role to get more information from important respondents that were hitherto left out.

It is argued by Kumar (2011), that: the sample size in qualitative research does not

play any substantial role as the purpose is to explore and describe in order to identify the spread of diversity and not its magnitude (Kumar, 2011). In another view, he proclaimed that – sample is inextricably related with survey, that, for the hardness of a researcher to reach out to the diverse population. Hence, the need for sample. The study sample size therefore, was six (6) respondents. The sample size was determined during the data collection phase at a time when we realized we have reached a point of data saturation.

Method of Data Collection

Remote Interview: The main source of data is remote interview (also called online interview – web-based interview which were conducted using online platforms like google Meet and Zoom). The web-based allowed us to conduct our study with ease.

Secondary Documents: Secondary data corroborated the data gotten from primary source. Some of the relevant documents relied on are: National Artificial Intelligence Policy and Strategy, 2021 and Report of Public Broadcasting Service, 2016.

Method of Data Analysis

Thematic analysis was adopted for the study. Thematic analysis is a method of analyzing data by putting similar responses in the same category (Kerlinger, 1986). He added that ... the goal of a thematic analysis is to identify themes, i.e. patterns in the data that are important or interesting, and use these themes to address the research questions. The rationale behind the choice of thematic analysis was that ‘the approach can produce an insightful analysis that answers the research questions’. The study adapted the Clarke and Braun’s (2006) 5-step framework as.

Data Analysis

Analysis of Interview Responses Thematically

S/N	Position	Code	Date
1.	Ag. Director, ICT	(R ₁)	24/01/2024
2.	Head of ICT Department	(R ₂)	24/01/2024
3.	Head of Data Centre/Network Management Branch	(R ₃)	23/02/2024
4.	Head of e-Government Solution Branch	(R ₄)	23/02/2024
5.	Staff (2) from the Database Management Unit	(R5-6)	23/04/2024
6.	two (2) key staff of (NITDA)	(R7-8)	23/02/2024

Source: Research Survey, 2024.

Note: R = Respondent

Theme I: Artificial Intelligence in Governance and the speed of public service delivery in Nigerian agencies.

Sub-Theme Ia: Explain how the adoption of Artificial Intelligence in Governance has promoted the speed of public service delivery in Nigerian agencies According to the respondents, there is no doubt that AI has promoted on the speed of public service delivery in Nigerian agencies. What we ought to do with delay is now done within the blink of eyes. Some of several ways where AI has promoted on the speed of public service delivery in Nigerian agencies include the following:

- i. **Automation:** By automating routine tasks, such as data entry and processing, AI can reduce the time it takes to complete these task, allowing agencies to serve more people in less time (R₁, R₂, R₃, R₄, and R₅).
- ii. **Predictive Analytics:** AI has helped agencies predict demand for services and allocate resources more efficiently – reducing wait times and improving overall efficiency (R₆, R₇, and R₈).

Sub-Theme Ib: What can be done to further improve speed of public service delivery in Nigerian agencies with the adoption of Artificial Intelligence

The respondents unanimously stated that the following actions are necessary to further improve speed of public service delivery in Nigerian agencies with the adoption of Artificial Intelligence:

- a. **Standardization and Integration:** There is need to establish standards and protocols for the use of AI in government services that can help to ensure that AI systems are interoperated and integrated with existing systems and processes (R₆, R₇, and R₈).
- b. **Continuous Improvement:** Agencies should continuously evaluate and improve the performance of AI systems, incorporating feedback from users and stakeholders to improve efficiency and effectiveness (R₁, R₂, R₃, R₄, and R₅).

Theme II: Artificial Intelligence in Governance and fraud detection in Nigerian agencies.

Sub-Theme IIa: Describe how the adoption of Artificial Intelligence in Governance has promoted fraud detection in Nigerian agencies.

The respondents without delay claimed that AI has helped detect fraud in Nigerian agencies in the following several ways:

- a. **Pattern Recognition:** By analysing large volumes of data, AI systems can identify patterns of fraudulent activity, such as usual transaction patterns or data discrepancies.
- b. **Real-Time Monitoring:** AI has helped in monitoring transactions and other activities in real-time, allowing agencies to identify potential fraud quickly and take steps to prevent or minimise losses (R₁, R₂, R₃, R₄, R₅, R₆, R₇, and R₈).

Sub-Theme IIb: What can be done to further improve fraud detection in Nigerian agencies with the adoption of Artificial Intelligence

To improve fraud detection in Nigerian agencies with the adoption of Artificial Intelligence, the following actions are very necessary:

- a. **Data Sharing on Fraudulence Acts:** Agencies should share data and information on fraudulent activities, allowing AI systems to learn from a larger pool of data and identify patterns more accurately.
- b. **Intelligent Monitoring:** AI systems should be developed to monitor multiple types of data, such as transaction data and social media activity across different platforms.
- c. **AI Training:** Agencies should invest in training their staff on the use of AI for fraud detection, ensuring that they can effectively use AI tools to identify and prevent fraud (R₁, R₂, R₃, R₄, R₅, R₆, R₇, and R₈).

Discussion of Major Findings

The study assessed Artificial Intelligence in Governance: A path to efficient public service delivery in Nigeria with particular focus to Federal Ministry of Communication and Digital Economy and National Information Technology Development Agency (NITDA). From the presentation and analysis of data, the study arrived at some findings which are discussed below:

- i. The study found that the adoption of Artificial Intelligence in Governance has promoted on the speed of public service delivery in Nigerian agencies. Some of several ways where AI has promoted on the speed of public service delivery in Nigerian agencies include automation, predictive analytics etc.
- ii. On objective II and proposition II, the study found that the adoption of Artificial Intelligence in Governance has promoted fraud detection in Nigerian agencies. AI has helped detect fraud in Nigerian agencies in several ways e.g. AI systems has helped in identifying patterns of fraudulent activity, such as usual transaction patterns or data discrepancies; additionally, AI has helped in monitoring transactions and other activities in real-time, allowing agencies to identify potential fraud quickly and take steps to prevent or minimise losses.

Conclusion

The potential benefits of adopting artificial intelligence (AI) in governance for improving service delivery and enhancing fraud detection in Nigeria are indeed substantial. By leveraging AI technologies, government agencies can streamline processes, enhance efficiency, and deliver

services to citizens with greater speed and accuracy. Through automation of routine tasks, analysis of vast amounts of data, and identification of irregularities or patterns, AI has the capacity to revolutionize how public services are administered, leading to improved outcomes and increased transparency. Summarily, while the adoption of AI in governance holds great promise for Nigeria, realizing its full potential will require concerted efforts to invest in AI capabilities, promote data sharing and integration, and provide ongoing training and support for government personnel. By embracing AI as a transformative tool for enhancing service delivery, improving efficiency and combating fraud, Nigeria can position itself at the forefront of innovative governance practices in the digital age.

Recommendations

The recommendations are not far from the suggestions made by the respondents in answering the question “what can be done to further improve speed of public service delivery and fraud detection in Nigerian agencies with the adoption of Artificial Intelligence”.

- i. On the part of improving the speed of public service delivery in Nigerian agencies with the adoption of Artificial Intelligence, there is need to establish standards and protocols for the use of AI in government services that can help to ensure that AI systems are interoperated and integrated with existing systems and processes. Additionally, agencies should continuously evaluate and improve the

References

Agba, M. S., Agba, G. E. M., Ettah, G., Enang, A. U., & Ata-Agboni, J. U. (2023). Building a New Nigeria Where Things Work: Meritocracy,

performance of AI systems, incorporating feedback from users and stakeholders to improve efficiency and effectiveness.

- ii. Regarding how to further improve fraud detection in Nigerian agencies with the adoption of Artificial Intelligence, there is need for the agencies to share data and information on fraudulent activities, allowing AI systems to learn from a larger pool of data and identify patterns more accurately. Furthermore, AI systems should be developed to monitor multiple types of data, such as transaction data and social media activity across different platforms. Other recommendations are:
 - a. **Creating Inclusive Digital Platforms:** Ensuring that digital infrastructure and literacy initiatives are inclusive and accessible to all Nigerians, including those in rural and underserved areas, is crucial for building a universally empowered digital society.
 - b. **Prioritizing Digital Literacy:** Implementing nationwide digital literacy programs is essential for ensuring that all segments of the Nigerian population can benefit from AI and other digital innovations. These programs should focus on developing skills necessary for the digital age, including critical thinking, digital ethics, and cybersecurity awareness.

Pragmatism and Honesty Principles as Mode of Analysis and Prescription (MoAP). *Journal of Public Administration, Policy and Governance Research*, 1(1), 1–12. Retrieved from

- <https://jppagr.com/index.php/research/article/view/3>
- Agba, M. S., Ocheni, R. I., Ocheni, S. I., Ettah, G., Abang, P. O., Paul, S. O., & Agba, G. E. M. (2022). COVID-19 and the workplace of higher educational institutions in developing market economies: Lessons, policy options and the emerging new normal [Special issue]. *Corporate & Business Strategy Review*, 3(2), 328–338. <https://doi.org/10.22495/cbsrv3i2siart14>
- Amaresh, P. (2020). Service Delivery to imply tangible and intangible goods. <https://diplomatist.com/2020/05/13/service-delivery-international-relations-anddiplomacy/#:~:text=As%20per%20the%20report%2C%20AI,diplomatic%20missions%20and%20so%20on.>
- Cagan, A. (2019) L'intelligence artificielle n'existe pas: interview de Luc Julia, le cocréateur de Siri. *Journal du geek*, [online]. <https://www.journaldugeek.com/dossier/lintelligenceartificielle-nexiste-interview-deluc-julia-cocreateur-de-siri/> [Accessed 21st March 2019].
- Christie, E. H., (2020). "Artificial Intelligence at NATO: dynamic adoption, responsible use." *NATO Review*, November 24. www.nato.int/docu/review/articles/2020/11/24/artificialintelligence-at-nato-dynamic-adoption-responsible-use/index.html.
- Concept for Robotic and Autonomous Systems, 2017.
- Cummings, M. L. (2017) *Artificial Intelligence and the Future of Warfare*. Chatham House.
- <https://www.chathamhouse.org/sites/default/files/publications/research/2017-01-26artificial-intelligence-future-warfarecumings-final.pdf> [Accessed 2nd February 2019].
- Floridi, L., (2020). "AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations." *Minds and Machines* 30, no. 4: 689–707.
- Kerlinger F.N. (1986). *Foundation of behavioural research*. 3rd Edition, Holt, Rinehart and Winston, New York
- Kumar, R. (2011). *Step-by-Step Research methodology: A complete guide for Beginners*, New Delhi India. Vistar Publications, p. 23
- Li, D., and Eleonore P., (2018). "Artificial Intelligence for Mass Flourishing." *Our World*, October 15. <https://ourworld.unu.edu/en/artificial-intelligence-for-mass-flourishing>.
- National Joint Centre for Artificial Intelligence and Robotics (Nigeria) (2021). "About Us." Accessed 5th January, 2024. <https://ncair.gov.ng/about-us/>.
- National Artificial Intelligence Policy and Strategy, 2021.
- Nigeria Ministry of Information Technology and Communications, 2019.
- O'Brien, T. S. S., Natasha C., and Venky V., (2020). "How Global Tech Companies Can Champion Ethical AI." World Economic Forum Annual Meeting, Davos-Klosters, Switzerland, January 21-24, 2020. <https://www.weforum.org/agenda/2020/01/techcompanies-ethics-responsible-aimicrosoft/>.

Report of Public Broadcasting Service, 2016.

Rossi, Francesca. 2019. "Building Trust in Artificial Intelligence." *Journal of International Affairs* 72 (1). <https://jia.sipa.columbia.edu/building-trust-artificial-intelligence>.

USA DoD (2018) *Summary of the 2018 Department of Defense Artificial Intelligence Strategy*:

Harnessing AI to Advance Our Security and Prosperity. The United States of America, Department of Defense. <https://media.defense.gov/2019/Feb/12/2002088963/-1/1/1/SUMMARY-OF-DOD-AISTRATEGY.PDF> [Accessed 22 December 2018].

Appendix (A) Interview Schedule for the Respondents

Section A Bio-Data of the Respondents

a. Date of Interview

b. Position of the Respondent

Theme I: Artificial Intelligence in Governance and the speed of public service delivery in Nigerian agencies.

- i. Explain how the adoption of Artificial Intelligence in Governance has promoted the speed of public service delivery in Nigerian agencies
- ii. What can be done to further improve speed of public service delivery in Nigerian agencies with the adoption of Artificial Intelligence?

Theme II: Artificial Intelligence in Governance and fraud detection in Nigerian agencies.

- i. Describe how the adoption of Artificial Intelligence in Governance has promoted fraud detection in Nigerian agencies.
- ii. What can be done to further improve fraud detection in Nigerian agencies with the adoption of Artificial Intelligence?
- iii.