

AI AND THE TRANSFORMATION OF PUBLIC ADMINISTRATION DISCIPLINE IN NIGERIA

Ademola A. ADEROGBA

Department of General Studies, College of Applied Social Sciences
Lagos State University of Science and Technology, Ikorodu, Lagos State, Nigeria

Abstract

This chapter examines the impact of Artificial Intelligence (AI) in redefining Public Administration discipline in Nigeria. Public Administration (PA) comprises the practice and academic discipline, in which transformation in one consequentially effects on the other. Digital revolution is spreading quickly to all areas of endeavour; hence, the chapter will enhance the educational aspect, in engendering a careful coordinated transformation, necessary to drive smart governance in Nigeria. Therefore, to what extent has integration of algorithms into governance impacts the research and pedagogy of Public Administration discipline in Nigeria. The study adopts descriptive method and secondary data for analysis. Through the lenses of three theories; Technological Determinism, Sociotechnical System, and New Public Governance theories, it determines the nature of Public Administration before the emergence of AI, various forms of integration in Artificial Intelligence and Public Administration, and critically analyses the Nigerian context as a case study. Findings reveal inherent challenges of transformation such as; normative and ethical issues, infrastructural constraints, and uncoordinated policy. Therefore, for purpose of a revised transformation agenda, the chapter recommends developing national AI strategy, capacity building, transparency and accountability, funding, and stakeholder collaboration.

Keywords: Artificial Intelligence, Governance, Public Administration, Transformation

Introduction

Artificial Intelligence (AI) is one of the products of the digital revolution. It is reshaping the world in terms of governance and Public Administration (PA) in a global manner. Such AI tools

as; Machine Learning Algorithms, Predictive Analytics, and Intelligent Systems of decision-making are rapidly becoming part of the core infrastructures of the public sector, and displacing traditional ways of administrative thinking, providing public services to the citizens, and interacting with them (Agarwal et al., 2018; Wirtz et al., 2019).

The experience of developing nations including Nigeria brings both great opportunities and challenging issues relating to the integration of Artificial Intelligence in the Public Administration. Consequently, PA in Nigeria also needs to evolve critically, not only in practice, but also in its pedagogical curriculum and epistemological grounding, to meet the demands and reality of algorithmic governance.

Also, algorithmic governance involves the employment of AI to bolster decision-making, automate repetitive administrative tasks and facilitate efficiency and transparency in government (Meijer & Wessels, 2019). In Nigeria, nevertheless, such a world trend faces a complex of political, infrastructural, and institutional problems. Although digital governance projects, like the Treasury Single Account (TSA) or the National Identity Management System (NIMS), indicate an increasing usage of data-driven public management, however, there is little integration of AI into the teaching and research of public administration (Ojo et al., 2021). This chapter critically discusses the intended transformative effect of AI in the field of Public Administration as an academic subject taught in Nigeria with specific focus on curriculum redesign, capacity building and the ethical, legislative and governance aspects of algorithmic decision-making.

It is further the argument of this chapter that the future of Public Administration in Nigeria will largely be shaped by extent to which academic institutions are able to reconceptualise their mission and purpose in educating future public administrators, to become confident actors in a world that is increasingly driven by data. Such re-orientation should not only entail the embracement of interdisciplinary methodologies but also the development of critical awareness of the socio-political consequences of deploying AI into the context of governance. Basically, the sub-sections of the chapter include: conceptual explanations, and the theoretical framework. The next examine the current state of AI integration, anticipating its future development, and contribute to the broader scholarly discourse on the necessity for knowledge systems adapting, in response to the technological transformations characterising the 21st century. Sub-section on

various form of integration follows, thereafter, the Nigeria context is analysed. The rest are; challenges and way forward.

Conceptual Explanation

Public Administration

Public Administration, as an academic discipline, involves the systematic study and practical application of government policy, public affairs, and the management of public sector organisations. There are different perspectives by scholars relating to the discipline's evolution and its inherently interdisciplinary character.

Public Administration can be described as a discipline or an intellectual tradition, and a professional career on the organisation and operation of government. Although, earlier intellectual conception can be traced to classical thinkers such as Christian Wolff in the 1730s, it was Woodrow Wilson's seminal 1887 essay, *The Study of Administration*, that consolidated its identity within the social sciences and earned him recognition as the father of the field (Randma-Live & Connaughton, 2005).

He conceptualised the field as the detailed and meticulous enactment of the civil law, and came up with a sharp distinction between politics and administration, arguing that administration belongs to a different sphere than that of politics (Wilson, 1887). The orientation identified PA as a specific field of study, with the main concern of increasing efficiency and effectiveness of the government. On the contrary, Waldo (1948) who to a great extent opposed the developments of Wilson's approach, held more normative and value-driven orientation towards the discipline. According to Waldo, not only is Public Administration a managerial process but also, a political and moral act that is crucially involved in the democratic process and influenced by the values of the people.

Further stretching the theoretical envelope of the field, Nicholas Henry (1975) defined Public Administration as both an academic field and a practical one. As a field of inquiry, he stated that it can explore the dynamics, policies, and organisational design of state agencies in a quest to improve state governance based on theory, research and empirical studies.

Recently, Frederickson and Smith (2003) refer to Public Administration as the study of the public bureaucracy, and its contribution to policy implementation and provision of public services. Their conceptualisation foregrounds social equity, democratic governance, and ethical practice as central concerns of the discipline, reflecting a normative shift towards values-based Public Administration.

Public Administration is inherently interdisciplinary, drawing from political science, economics, management, sociology, and law, yet it maintains a distinct focus on the machinery and processes of government, the formulation and implementation of policy, and the pursuit of efficiency, accountability, equity, and transparency. It integrated theory, where structures, processes, and functions are critically examined, with practice, where these insights are applied and tested in real governance contexts, underscoring the reciprocal relationship between conceptual development and administrative action (Misic, 2021).

Over time, the field has evolved through paradigmatic shifts: from the politics, and administration dichotomy of its classical phase, through behavioural and human relations approaches, to the reformist orientation of New Public Administration, the managerial efficiency focus of New Public Management, and the adaptive, technology-driven ethos of Digital Era Governance. In essence, Public Administration remains central to governance and societal development, functioning as both a framework for understanding governmental action and a tool for improving the delivery of public services in an increasingly complex and interconnected world (Kadakure&Twum-Darko, 2024).

It can be inferred that recent definitions reflect the on-going evolution of Public Administration, from an emphasis on the efficient implementation of government policies to a dynamic academic discipline that prioritises inclusivity, interdisciplinary, global relevance, and ethical engagement with citizens.

Artificial Intelligence

A foundational definition of Artificial Intelligence is provided by Turing (1950), who characterised it as the scientific and engineering discipline, concerned with the creation of intelligent machines, with particular emphasis on intelligent computer programmes. Subsequent scholars have refined and expanded this conceptual framework: Raphael (1976) articulated AI as

the construction of machines capable of executing tasks that would require human intelligence if performed by a person. Rich (1985) further elaborated upon this definition by conceptualising AI as the systematic study of methods to enable computers to accomplish tasks at which humans demonstrate proficiency, but with the advantages of operation at large scale without error (Pellicelli, 2023).

Furthermore, the National Science and Technology Council (2016) provided a broader, behaviour-oriented definition of AI, emphasizing observable outcomes rather than the underlying mechanisms. Specifically, AI is defined as a computerised system that demonstrates behaviour typically regarded as necessitating intelligence (Pellicelli, 2023).

From a policy and regulatory perspective, the European AI High-Level Expert Group (AI HLEG) advanced a definition that underscores autonomy and goal-oriented behaviour. According to this definition, AI systems are those that exhibit intelligent behaviour through the analysis of their environment and the execution of actions, with a certain degree of autonomy, aimed at accomplishing specific objectives (Sheikh et al, 2023). This conceptualisation achieves a balance between inclusivity of diverse AI methodologies, and providing clear delineation between AI systems and general algorithms

Interdisciplinary scholars acknowledge the necessity for definitional flexibility. Gil de Zuniga et al. (2024) and Mcverry, (2024) proposed a definition tailored to the social sciences, characterising AI as the concrete, real-world capacity of non-human machines or artificial entities to perform tasks, solve problems, communicate, interact, and reason in a manner analogous to biological humans.

Theoretical Framework

For clearer comprehension of the effects of AI on Public Administration in Nigeria, the study triangulate three interrelated theories; Technological Determinism, Sociotechnical Systems, and New Public Governance (NPG) theories as framework. This will assist in illustrating how algorithmic technologies are influencing administrative practices on one hand, and specifically on the other, how it is redefining the academic and epistemological structure of Public Administration as a discipline in Nigeria.

Technological Determinism

Technological Determinism focuses on the technological innovation as the principal impetus for societal transformation, by influencing institutional arrangements, social conduct, and organisational configurations. When applied to the field of Public Administration, this theoretical framework posits that the integration of Artificial Intelligence within governance architectures engenders an inexorable reconfiguration of administrative processes, decision-making paradigms, and accountability structures. As digital algorithms increasingly underpin and automate governmental decision-making, traditional bureaucratic models characterised by manual operations and hierarchical authority, are progressively replaced by data-driven decentralised modalities of governance (Carr, 2015).

In the Nigerian context, the theory of Technological Determinism serves as a relevant explanatory framework for the paradigm shift from conventional administrative modalities to digitally oriented approaches, as evidenced by the implementation of the Treasury Single Account (TSA), Biometric Verification Systems in civil service administration, and the gradual development of smart governance infrastructures. These AI-driven systems transcend their instrumental utility, operating as potent catalysts that fundamentally reconstitute administrative culture, institutional values, and the requisite professional skill sets essential for contemporary governance. Technological Determinism therefore, provides a proactive epistemological stance, which highlights the disruptive implications of Artificial Intelligence on the constituent epistemological structures of Public Administration education in Nigeria, hence, challenging academic and institutional actors, to engage in a meticulous and thorough re-conceptualisation of curricular frameworks, methodological strata, and ethical norms in the field.

Sociotechnical Systems Theory

Whereas the relevance of technological resources is foregrounded in Technological Determinism, Sociotechnical Systems Theory is more holistic and integrative because it promotes the idea that technology and society are co-constructed. This theoretical platform assumes that the matters of optimal organisational efficacy include the intentional simultaneous and maximisation of social and technical sub-systems. This perspective has been able to explain in the context of Public Administration that technological artefacts do not essentially

predetermine, but what determines the praxis of governance is the dynamic interaction of both human actors, including administrators, educators, and students, and technical infrastructures, including Artificial Intelligence algorithms and data management systems.

This frame of analysis is a necessary point of departure towards making sense of the Nigerian environment, where the institutional capability, the political will, the cultural reasoning, and the infrastructural constraints work in concurrence to determine the success of AI in the field of administration. The integration of AI would be successful not only depending on the availability of technological resources but also on the readiness of the people in the public sector, the inclusiveness of the academic reform processes, as well as the fluidity of governance systems. Therefore, according to Sociotechnical Systems Theory, an inclusive and integrative perspective, with due attention to social embeddedness and situational specifics of the technological systems in the Nigerian milieu of the Public Administration is essential.

New Public Governance (NPG)

As a radical reaction to the very weaknesses of the traditional model of Public Administration and the New Public Management (NPM) alike, the paradigm of New Public Governance (NPG) shifts the lens of inquiry to pluralism, networked administration and a participatory decision making (Osborne, 2006). NPG recognises the complexity of modern-day governance whereby public value is created through collaborative networks that span governmental agencies, the business sector, civil society, and, in an ever-growing fashion sophisticated intelligent technology.

The implementation of AI in the public governance aligns with the general principles of NPG by assisting in the creation of data-sharing platforms, predictive analytics, and collaborating digital tools that contribute to increased transparency, responsiveness, and citizen engagement (Wirtz et al., 2019). Such theoretical inclination is especially topical in the Nigerian setting, which is marked by institutional instability and limited sources of citizen trust, which requires new methods to consolidate legitimacy and functional effectiveness. There is key potential, inherent in AI, to support these goals by improving government transparency and facilitating more responsible, real-time decision-making.

In addition, New Public Governance is capable of providing an overarching Theory of Public Administration to guide learners and positioning them within the technology-poised collaborative governance landscape. It creates the need for the substantive curricular innovation including the integration of AI ethics, data governance, digital literacy, and interdisciplinary approaches, hence, ensuring that future public administrators are more than sufficient to meet the multi-pronged challenge of algorithmic governance.

Although these theoretical frameworks are unique and contribute differently in the analysis of the impact of AI on PA in Nigeria, the combination yields a multidimensional approach towards analysing the effects of artificial intelligence on the administration of policies in Nigeria. Technological Determinism explains transformational potential of AI; Sociotechnical Systems Theory reflects rich and circular relationship between people and technology; and New Public Governance is able to capture relationships of distributed and participatory environment within which AI is being increasingly used.

Collectively, these paradigms address a sophisticated analysis of just what is occurring in the ongoing transformation of the field of Public Administration, not merely as a mode of governance, but also as an academic discipline that must respond to the increasing pace of the technological and societal environment. They support the main argument in this chapter, which is that; Artificial Intelligence is more than a technical tool, but a paradigm shifting phenomenon with far-reaching implications on the theory, practice and pedagogy of public administration in Nigeria.

The Nature of Public Administration before the Advent of AI

Before the emergence of AI, the discipline of PA was mainly characterised by bureaucratic procedures, top-down-management, and systems of making decisions based on the human-centred authority. Grounded in classical theoretical foundations, notably Max Weber's model of bureaucracy, PA functioned through codified rules, standardised procedural frameworks, and a clearly delineated division of labour, all designed to ensure administrative order, predictability, and accountability (Weber, 1947). Decision-making processes were primarily predicated upon rational analysis, accumulated experience, and the specialised expertise of public administrators,

frequently circumscribed by the limitations inherent in the availability and veracity of data collected manually.

Historically, PA depends predominantly on paper-based documentation, direct interpersonal interactions, and labour-intensive procedural workflows. Such manual systems inherently constrained the speed and efficiency of service delivery, while rendering administrative processes vulnerable to human error, procedural delays, and entrenched bureaucratic inefficiencies (Simon, 1997). Policymaking and implementation were chiefly informed by empirical knowledge, intuitive judgment, and the professional expertise of administrators, with the overall effectiveness of governance largely contingent upon the competence and ethical integrity of civil service personnel.

From an academic standpoint, Public Administration emerged as a distinct discipline separate from Political Science in the early twentieth century, with a concentrated focus on organisational theory, administrative law, and public policy (Stillman, 2009). In the Nigerian context, the evolution of Public Administration occurred within a post-colonial framework, wherein the administrative apparatus was profoundly shaped by the British civil service tradition. The predominant emphasis centred on enhancing administrative efficiency, personnel management, and capacity building to facilitate national development (Ayo, 2000). Consequently, the academic curriculum was structured to reflect these priorities, foregrounding public sector ethics, governance frameworks, financial administration, and the operational mechanics of public service delivery, while largely neglecting emergent technological innovations and the integration of data analytics.

The pre-artificial intelligence era was characterised by constrained access to real-time data and limited availability of advanced analytical tools. Consequently, planning and policy formulation tended to be predominantly reactive, relying on periodic reports and often out-dated statistical information. The feedback mechanisms between citizens and government entities were generally slow and frequently ineffective, thereby impeding the realisation of responsive and adaptive governance (Denhardt&Denhardt, 2015). Although the late twentieth century witnessed the advent of certain digital technologies, including basic computing and management information systems, their implementation remained largely marginal and functioned in a supportive, rather than transformative, capacity.

In summary, public administration prior to the integration of artificial intelligence was fundamentally oriented around rule-based governance, procedural efficiency, and human discretion. This paradigm was successful in some spheres, but did not have the flexibility needed to adapt, predict, and respond to data as characterised modern governance with regards to Artificial Intelligence.

Forms of Artificial Intelligence and Public Administration Integration

AI's Impact on Public Administration Research

Artificial Intelligence (AI) is actively revolutionising the area of research in Public Administration by introducing new approaches to methodological research and sources of data as well as more analytical frames that can extend the availability of research substantially. Historically, the research in the field of Public Administration generally relies on the qualitative case study, questionnaires and institutional examinations. Even though, these traditional methods are very valuable in their insights, most of them have limitations in terms of scale and timeliness besides objectiveness of what is being studied. The fact that the AI, specifically, Machine Learning (ML), Natural Language Processing (NLP), and Big Data Analytics change the methodological possibilities, to a significant degree enables the researchers to work with large datasets and discover previously unknown patterns, as well as simulate the results of the policy implementation with a higher degree of precision than ever before (Sun & Medaglia, 2019).

Perhaps the most important and revolutionising impacts that Artificial Intelligence can bring into the research on Public Administration could be observed in the spheres of data gathering and analysis. Modern researchers have access to analysing real-time administrative records, social media feeds, and digitised governmental documentation, and therefore can come up with subtle observations about citizen actions, service fulfilment, and the mechanics of policy execution (Wirtz et al., 2019). This include AI-based methods like text mining and sentiment analysis, which are becoming more and more common in analysing citizen input, policy records, and parliament proceedings, offering the advantage over the manual content analysis by being arguably more scalable and systematised (Kankanhalli et al., 2019).

In addition, AI has largely increased predictive research capabilities in the profession. By utilising both historical and real-time data, researchers can build advanced models that can, to

some degree, predict a diverse set of administrative outcomes, including budgetary shortfalls, rates of policy compliance, and levels of citizen satisfaction. Such predictive insights have both theoretical and policy applications, as such, they can advance theoretical work as well as guide the formulation of evidence-based policies (Mikhaylov et al., 2022). Further, AI can support experimental research designs; as such research designs allow a scholar to evaluate administrative interventions in controlled settings, which is possible through simulation of complex administration situations in virtual frameworks.

Artificial Intelligence as a methodological innovation evolves with the challenges of research ethics and governance. However, there is mounting evidence that scholars are asking ethical and normative questions relating to the application of AI in the various spheres, including Public Administration, which is prompting the development of new research lines that are focused on equity, transparency, and legitimacy of those institutions (Busuioc, 2021). Such emerging research interests are especially relevant in environments like Nigeria, where inequities in digital connectivity and an ongoing history of governance issues make analyses of the possible uses and risks of AI technologies prime challenges to be addressed in contextual forms.

Artificial Intelligence is still in the early phases of integrating to the study of Public Administration in Nigerian context, but the possibilities associated with the implementation of AI in the study of this subject are high. While global academic communities are increasingly adopting AI for complex data analysis, policy modelling and simulation, Nigerian scholars are confronting constraints that hinder the widespread integration of such technologies. Nevertheless, there is a discernible and growing interest in incorporating AI-driven methodologies, such as data mining, sentiment analysis, and predictive analytics, into governance and public policy research, particularly in domains such as public finance, electoral behaviour, and the monitoring of service delivery (Oni et al., 2023).

Nigerian universities and research institutions are increasingly engaging in interdisciplinary collaborations that integrate public administration with computer science and data analytics, to investigate governance challenges through the application of digital tools. They are also, conducting evaluation research using AI as tool on the government reform projects like the Integrated Payroll and Personnel Information System (IPPIS) and the Treasury Single Account

(TSA). Nevertheless, despite these positive changes, there are noted large obstacles (Ndukwe&Edeh, 2022).

AI and the Pedagogy of Public Administration

Extending the use of Artificial Intelligence (AI) in the Public Administration (PA) is no longer only about practical process or a research activity; it also involves reforming the educational foundations of the field. Rooted firmly in the administrative theory, bureaucratic values, and policy development, the process of training individuals in the area of PA is experiencing a momentous shift due to the changing needs of the digital world and smart technologies. With governments increasingly using AI to automate decisions, delivery of services, and improve policies, there becomes an urgent need to revise the curricula and methodology used in academic institutions to keep up with a world that is quickly becoming more immersed in AI. The education of future leaders in the realm of Public Administration must shift the educational priorities and change the approaches to prepare the leaders to work and lead in the future on a technologically advanced landscape (Kettunen&Kallio, 2021).

AI is slowly introducing a number of transformative aspects in the teaching of the Public Administration, especially in three key areas. Basically, it requires a digital literacy and data analytics incorporated into the curriculum. Students need to develop an essential base of knowledge in the area of machine learning, algorithmic decision-making, and the ethics of using data in learning and operating effectively within the environment of modern governance (Mergel et al., 2019). Second, AI can support the use of innovative instructional technologies, such as intelligent tutoring systems, intelligent simulations and virtual governance laboratories. These applications provide the possibility in constructing immersive, realistic conditions of learning experiences that closely mirror the difficulties of real-life policy-making cycles and administrative decision processes (Liu et al., 2024).

Third, the development in AI stimulates the educators in using cross-curriculum teaching strategies. Public Administration can no more be taught successfully without touching technology, ethics and data science. The basic digital governance, algorithmic accountability, and civic technology must be embedded in the curricular mix of digital governance, to ensure that the knowledge of AI-related impact on the administrative decision-making and the production of

public value are founded on an in-depth view. It is particularly important that they adopt such an interdisciplinary approach in developing countries like Nigeria because, the socio-technical issues that face the public institutions in these countries are multiple and complex, requiring both contextual and technical expertise (Omisore&Abiodun, 2023).

Nevertheless, although the application of AI-informed pedagogy in Nigerian Public Administration education is vital, there is still a growth phase to it. Majority of academic programmes still, largely depended on the traditional theoretical frameworks, which limits exposure to digital competencies by students.

In a nutshell, the emergence of AI provides an opportunity to refashion the pedagogical specifics of PA by positioning the academic training systems to address the multifaceted challenges of the contemporary governance. The ability to critically interpret, ethically evaluate, and effectively apply AI technologies is essential in preparing a future-ready workforce in the public sector, which can actively engage in governance, being informed, accountable and effective through an algorithm-driven world.

Challenges of Transformation

There are difficulties with the adoption and assimilation of AI into PA. They include:

Normative and Ethical Challenges

The gradual penetration of AI into the administration systems of public services, introduces a set of normative and ethical issues, some of which may require shorter and longer-term consideration. Despite the huge potential of AI in making governance more efficient, transparent, and responsive, it also poses tremendous threats to the issue of fairness, accountability, the safeguarding of human rights, and the maintenance of a democratic legitimacy (Yeung, 2022). Such problems are particularly relevant in the sphere of the public administration where the decisions may often affect wide layers of the population, and these decisions are often based on the appeal to the deeply rooted public values.

Algorithmic bias is one of the most urgent ethical problems that arise with the implementation of the use of AI in public administration. The risk is that AI systems trained on historical or unrepresentative datasets would only reproduce the social inequalities that they currently face,

further marginalising historically disadvantaged groups, through the delivery of services and other forms of interactions they offer to society (Eubanks, 2018). This issue is exceptionally relevant in the Nigerian setting because deficiency in socio-economic equity and ethnic heterogeneity and access to information technologies have the potential to increase the marginalisation of certain members of the population, and undermine the credibility of governmental institutions among the citizens (Ndukwe&Edeh, 2022).

Besides, transparency and explainability are important normative issues. Numerous AI systems especially those ones that use deep learning frameworks operate as black boxes that do not allow the internal decision-making process to be seen even by public officials or by the citizens (Wirtz et al., 2022). This opacity is very problematic to democratic accountability, as it extensively reduces the capacity of affected parties to place queries, object, or challenge administrative actions informed or arrived by algorithmic calculations. Without a significant oversight system, empowerment of AI systems can support the loss of human agency and generate ethical murk of the decision-making process in the state.

More so, the use of AI in surveillance and monitoring of citizens brings in serious question relating to the threat to privacy, liberty of the individual and civil rights. It is necessary to implement AI technologies in public institutions that serve the purposes of predictive policing, biometric identification, or social surveillance, while also critically considering ethical boundaries of state authority (Rahwan et al., 2019). Such risks are highly prevalent in those contexts where data protection and accountability of algorithms are desirable but there is absence of effective guiding and regulatory directions, which is the case in Nigeria.

Lastly, the use of AI is problematic in terms of challenging the very normative basis of the field of Public Administration. Due to the growing dependence on automation and data-driven decision-making, basic values like the public good and equity as well as citizen involvement in decision-making process require a critical evaluation. These are matters of great importance, and educators and policymakers can play an active role in addressing them, if we are to preserve the values and practice of a democratic society in a modulating algorithm-dominated digital environment.

Infrastructural Constraints

Nonetheless, in spite of the improvements, there are still major obstacles to successfully incorporating Artificial Intelligence into the activities of the public sector in Nigeria. The adoption of AI is still not very well established owing to the existing gaps on infrastructural development, including internet facilities, power and equipment maintenance (Nwosu et al., 2024).

Also, it is essential to conduct an empirical study to determine the levels to which inequality in Information-and-Communication Technology (ICT) infrastructure and unreliable power supply in the state of Nigeria limit the adoption of the AI-powered governance is needed (Ifatimehin et al., 2024).

Uncoordinated Policies

There is policy coordination challenge. Without a deliberate and inclusive policy response to ensure that the current technology trends do not widen the existing disparities, the transformation process may be inefficient. This includes harmonising data specification, regulatory framework ineffectiveness. The Global AI Summit for Africa report shows that the proportion of women working in the outsourcing industry is disproportionately targetable by automation, and thus women are 10% more likely to be automated than men in similar opportunities (Ignatius, 2025).

Nigeria Case Study: the Contextual Integration of AI in Public Administration

When assessing the transformative power of Artificial Intelligence on public administration, the Nigeria context, offers insight to the potentials and intricacies of AI implementation in the Global South. Being a regional AI development leader, by 2024 Nigeria served as host for more than 400 AIs businesses and received about 520 million in equity investments, which indicate substantial growth in the sector beyond the state-administered realm (Ohumu, 2025).

Prominent examples of such include the use of AI to analyse infant cries to detect birth asphyxia with high accuracy (up to 96 percent) under the name Ubenwa Health, and Kudi a conversational AI platform that provides banking services and able to raise funding to the tune of 5.9 million dollars via Y Combinator (Ohumu, 2025). These inventions are emblematic of how AI is being used in providing critical public goods in situations that have frequently overwhelmed traditional

systems, alongside wider evidence that AI can be deployed in low- and middle income countries as code and not cash (Financial Times, 2025).

On policy fronts, the National AI Strategy was introduced in August, 2024 by the National Information Technology Development Agency (NITDA) in collaboration with the Federal Ministry of Communications, Innovation, and Digital Economy a twin-focal direction. This logic proposes an improvement in AI literacy by implementing specific capacity building projects, as well as, the formulation of ethical regulatory systems that promotes the values of transparency, data privacy, and security (Shuaib, 2024; Policy Vault, 2024).

Physical advancements in the AI ecosystem as well as within the broader technology landscape are further examples of this strategic master plan coming into operation. The National Centre for Artificial Intelligence and Robotics (NCAIR) and the Nigeria Artificial Intelligence Research Scheme (NAIRS) are signifiers of a serious in-country thrust towards the research and development of AI. At the same time, the cooperation with companies such as Microsoft, PwC and Lagos Business School is also strategic in enabling skill development and the spread of AI expertise to various sectors (PwC Nigeria, 2025).

In essence, the case of Nigeria is indicative of the binary circumstance surrounding the development of AI in the Global South, in which there is significant potential for invention but also burdened with institutional barriers and the threat of social exclusion.

Towards A Revised Transformation Agenda

AI applications are being piloted in a variety of fields such as e-governance, biometric identification systems and chatbot-enabled tax administration systems, and other governance innovations but their mass adoption in Nigeria is still in early stage. To accelerate and sustain the transformation in the field of academia, reassessed research and pedagogical agenda are required. Therefore, the impacts of the following observed policy implications and recommendations will help in the transformation:

- i. The observation from literature highlights that Nigeria's engagement with Artificial Intelligence remains fragmented across various sectors, including public service delivery, healthcare, security, and education; hence; there is need for interdisciplinary

- research and pedagogical policy, to motivate multi-sectorial case studies, and comparative analysis that can critically examine AI's effects within localised contexts, and developing modules to address the application of AI in governance.
- ii. Nigeria AI integration is still at nascent stage, which comes with the risks such as overreliance on algorithmic recommendations, commonly referred to as automation bias, hence; there is need for bias mitigation strategies and responsible deployment of algorithms through content regulatory policy.
 - iii. Digital infrastructure is expensive, and since it is a major constraint, there is need for funding policy.

Recommendations

To integrate AI effectively into Nigerian public administration, policy reform must address foundational gaps in digital infrastructure, regulatory frameworks, and institutional capacity.

First, government should develop national AI strategy that explicitly aligned with governance objectives. The digital policies currently in place are not properly aligned and so they are not specific to the use of AI in the delivery of public service. Context-specific policies must be provided by the Federal Government around ethical AI adoption, especially in domains such as social services, tax collection and citizen monitoring.

Second, specialist should be involved in capacity building in terms of formal and in-service digital training. The curricula of Public Administration discipline should be revised and augmented with AI governance, ethics, and data literacy. At the same time, the reform of civil service should include AI opportunities training routes to reduce the gap in skills among ministries and agencies.

Third, policies should specify transparency and accountability standards of algorithmic decision-making. Regulations should compel explainable AI system and supervisory organisation that is capable of verifying automated procedures to avoid unfairness and prejudices.

Fourth, government should also initiate sustainability intervention funding. Digital facilities require funding that can only be supported by critical stakeholders and the government.

Lastly, a multi-stakeholder cooperation between universities, civil society organisations and the tech industry must be institutionalised towards encouragement of innovation and feedback-based AI governance.

The neglect of these reforms in Nigeria will consolidate its digital inequality, and losing the public faith. Such efforts will require well-designed, context-sensitive policies that can realise the transformative potential of AI, but at the same time ensure the democratic governance of populations.

Conclusion

Artificial Intelligence integration in the field of Public Administration is a new stage of transformation in the sphere of Nigerian governance and academic environments. As algorithms are used more to make decisions, a transformation is required in the field of Public Administration, which had remained a traditional bureaucratic model but now needs to transform into more dynamic and data-based models. The chapter in the same vein also noted that there is an urgent need to updating the research and teaching agenda, where ethics shall be central to the use of AI, infrastructure provided and an interdisciplinary approach must be implemented.

Effort to facilitate a meaningful AI contribution to public governance in Nigeria requires countering systemic obstacles, removing gap in digital infrastructure, skills shortages, and policy gaps. Incorporating the curriculum in core academic disciplines and training programmes in the civil service will be important in the development of a new generation of administrators that are technologically literate and ethically minded.

In addition, research should take a critical look into the socio-political ramifications of algorithmic governance, especially questions of bias, transparency and accountability. The challenge is that as Nigeria makes its way through the issues of opportunity and risk behind AI, the success will be determined by the way in which the government institutions adjust, and the carefulness of the policymaking and implementation.

The future of AI oriented Public Administration discipline and its consequences on the governance with algorithms in Nigeria, is not only in technological differences of the era but the

education curriculum and approach that is inclusive, context-sensitive, and well-informed research-based governance practices that uphold communal values and democratic ideals.

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