RESEARCH ARTICLE

JENER Journal of Empirical and Non-Empirical Research
Volume 2, Issue 1, Page 205-209 | Article No. 20
DOI: 10.4898/jener.v2i1.a20
ISSN: 7895-9216
Journal homepage: https://jenerjournal.com

JENER Journal
JENER Journal of Empirical and Non-Empirical Research

Exploring the Influence of Artificial Intelligence (AI) Adoption in Public Administration

Muhammad Jalalu Maiwada[1], Lawal Idris Bagiwa[2] & Muhammad Aliyu[3]

[1]*Department of Public Administration, Hassan Usman Katsina Polytechnic, Katsina, Katsina State, Nigeria*
[2]*Department of Computer Science Hassan Usman Katsina Polytechnic, Katsina, Katsina State, Nigeria*
[3]*Department of Consultancy Services, Hassan Usman Katsina Polytechnic, Katsina, Katsina State, Nigeria.*
*Corresponding Author: Lawal Idris Bagiwa, Email: lawal.idris.bagiwa@hukpoly.edu.ng

APA Citation and Referencing: Maiwada, M.J., Bagiwa, L.I., & Aliyu, M. (2026). Exploring the Influence of Artificial Intelligence (AI) Adoption in Public Administration. *JENER Journal of Empirical and Non-Empirical Research*, 2(1), 205-209

ARTICLE INFORMATION

Article history:
Published on 17th Jan 2026

Keywords:
Artificial Intelligence
AI, Public Administration
Employee
Tertiary Institutions
Keyword 5 only

ABSTRACT

The potential of artificial intelligence (AI) to enhance decision-making and service delivery has made it more and more relevant in Public Administration. This study intends to investigate the prospect and challenges of implementing AI in the Public sector, as well as to determine and assess the effect of AI implementation on the caliber of Public services. The study will use tertiary institutions in Katsina State, Nigeria, as a case study. The research will be guided by five research questions. Descriptive survey research design will be used to accomplish this. To choose a sample from the population, the purposeful sampling technique will be applied. The procedure of gathering data will involve one-on-one interviews as well as an online questionnaire. Nvivo and the Statistical Package for Social Science (SPSS) will be used to analyze the data. The respondents' responses will serve as the basis for a clear interpretation of the outcome.

1. Introduction

An important change in how citizens get government services is represented by the incorporation of artificial intelligence (AI) into Public Administration. AI has becoming more and more popular in Public Administration around the world. AI entails machines carrying out cognitive functions including thinking, perceiving, learning, problem-solving, and decision-making Katekar & Cheruku, (2024). While nations like Indonesia have started to use AI developments to improve service delivery Yusriadi et al., (2023), some countries have shown that AI applications have the potential to generate Public value Katekar & Cheruku, (2024) by managing crises like the COVID-19 pandemic.

AI's influence on Public Administration also extends to smart city projects, where it helps to improve municipal infrastructure and services, automate processes, and achieve efficiencies Yigitcanlar et al., (2023). But there are difficulties, especially in fields like Public healthcare, where putting AI into practice poses special problems that need to be addressed Sun and Medaglia (2019).

According to Robles and Mallinson (2023), governance frameworks are crucial for managing the challenges of integrating AI into Public services, guaranteeing responsible development, and reducing dangers for both individuals and society.

The way the Public views artificial intelligence in urban services has a big impact on how local governments accept and use it (Yigitcanlar et al., 2022). Sustaining Public confidence and resolving such systemic issues require an awareness of the ethical ramifications and guaranteeing accountability in government-used AI systems (Hinton, 2023). A thorough governance framework that supports values, justice, accountability, sustainability, and openness is also required for the responsible application of AI in the Public sector (Leikas et al., 2022).

Governments must develop policies and strategies that take advantage of AI's potential to improve government services and preserve competitiveness as it develops and becomes more prevalent in Public Administration, as demonstrated by Egypt's tourism industry (Ragab & Ezzat, 2022). Governments may use AI technology to enhance service delivery, expedite processes, and eventually provide citizens more value by rethinking the sustainable social development of AI and encouraging cooperative efforts (Rojas & Tuomi, 2022).

In Public Administration, artificial intelligence (AI) is becoming increasingly relevant due to its ability to enhance decision-making and service delivery. Numerous Public service areas, such as health, education, security, and city Administration, have implemented AI, demonstrating its capacity to handle vast amounts of data, spot patterns, and generate forecasts. More effective and efficient governance follows from this (Robles & Mallinson, 2023).

A number of obstacles and challenges must be overcome for AI to be implemented successfully. These challenges may include moral challenges, technical, and societal including privacy concerns and change revulsion (Gupta, 2019). The complexity, subjectivity, and lack of standardisation in the interpretation of ethical principles make ethical issues essential when implementing AI (Zhou et al., 2020). The process of putting into practice moral AI systems that advance society is complex, resource-intensive,

and fraught with dangers (Kieslich et al., 2022). The above challenges need to be investigated and solution that is data driven need to be formulated. Therefore, this research was prompted to address these challenges.

The aim of this research was to explore the influence of artificial intelligence adoption in Public Administration; taking managers and non-mangers offices in Tertiary Institutions in Katsina State, Nigeria as case study. the following objectives were itemized in order to carry out the research effectively:

i. To assess the level of employee addictiveness to Artificial Intelligence (AI) tools in fuilfilling their official duties.
ii. To determine the AI tools that the employees are more exposed to and the influence it has on their official activities.
iii. To ascertain the difference in employee usage of AI Tools by gender
iv. To ascertain how age has influence on employee usage of AI tools.

2. Literature Review

AI implementation in Public services has shown notable effects in a number of areas. Research has demonstrated the advantages of integrating AI into Public services, including higher productivity and efficiency (Zhu et al., 2021; Chen et al., 2021; Carvalho et al., 2019). Government organisations' AI initiatives have sought to increase Public interest and add value by delivering better services (Zhu et al., 2021). More algorithmically informed decisions have resulted from the use of AI systems, raising the possibility of social impact (Busuioc, 2020).

Additionally, AI has improved Public services' user satisfaction and experience (Zhu et al., 2021; Chen et al., 2021; Chatterjee et al., 2022). In order to comprehend customer experiences and impacting aspects, AI-based self-service technologies have been researched, highlighting the significance of user satisfaction in service delivery (Chen et al., 2021).

According to empirical research, implementing AI can increase Public satisfaction and have a beneficial effect on administrative tasks carried out by the government (Chatterjee et al., 2022).

Furthermore, implementing AI has been essential to improving Public Administration's accountability and transparency (Busuioc, 2020; GÜNAL & Peçe, 2022). According to Busuioc (2020), AI technologies have the ability to influence bureaucratic discretion and administrative decision-making, highlighting the significance of holding algorithms accountable in Public Administration. In order to ensure accountability, transparency measures have become crucial, particularly in Public Administrations (GÜNAL & Peçe, 2022). To sum up, the use of artificial intelligence (AI) into Public services has shown increases in effectiveness, user satisfaction, and transparency. Governments may optimize decision-making procedures, improve service delivery, and encourage accountability in Public Administration by utilizing AI technologies.

3. Research Methodology

3.1 Description of the Study Area

The study's focus is Katsina State in Nigeria. On September 23, 1987, the government of General Ibrahim Babangida created Katsina from Kaduna State. It is composed of two emirates that were instrumental in the formation of the seven Hausa Kingdoms. Daura, Katsina, Zaria, Kano, Rano Gobir, and Biram were founded by members of the Bayajida and Daurama dynasty. Attractions for tourists in Daura include the fabled Kusugu well. Kumayo established Katsina, which was a significant center of study and commerce for the trans-Saharan trade prior to the Fulani invasion. One of the northern regions' first educational institutions was offered by it.

Katsina State is a northern Nigerian state that covers 24,192 square kilometers. Katsina State shares borders with the states of Jigawa and Kano in the east, Zamfara in the west, Kaduna in the south, and the Niger Republic in the north. The Fulani and Hausa people are indigenous. In Katsina State, there are fifteen Public tertiary institutions that are jointly owned by the federal and state governments (Shehu J., 2012).

3.2 Research Design

In general, the approach used in this study is similar to that of the majority of studies with a scientific foundation, if not all of them. The relevant literature on the research question will be reviewed. However, the study will use a mixed-approaches strategy that blends qualitative and quantitative research techniques.

According to Salter (2023, qualitative research allows the researcher to examine the nature of reality or the interaction between factors. Salter went on to say that in qualitative research, gathering data from respondents that addresses the study questions enables the investigator to quantify and examine the causal relationships between various variables. Conversely, there are numerous methods available for gathering quantitative data.

Researchers can directly gather quantitative data in experimental situations, such as Quantitative data might be directly collected by researchers in experimental settings, or research participants can self-report such data on a pretest or posttest.

Interviewer- or self-administered questionnaires are frequently used to gather quantitative data by asking participants to report demographics, experiences, attitudes, and other details. It is also typical to observe quantitative data directly that has been collected for another reason.

3.3 Population of the Study

There are fifteen Public teriary institutions in Katsina State, these are: Sani Zangon Daura School of Health Technology Daura, Iro Kankia School of Health Technology Kankia, Katsina School of Nursing and Midwifery, Katsina, Hassan Usman Katsina Polytechnic, Katsina, Federal College of Education Katsina, School of Basic and Remedial Studies, Funtua, Katsina State Institute of Technology and Management, Yusuf Bala Usman College of Legal and General Studies, Daura, Isa Kaita College of Education, Dutsinma, Federal University Dutsinma, Muhammdu Buhari School of Metrological Studies, Katsina, Federal University of Health Sciences, Katsina and College of Administration, Funtua.

3.4 Sampling Method

Using the purposeful sampling technique, the researchers will choose a certain group or category from the population to represent the sample because, in terms of the relevant characteristic, this category will be thought to mirror the whole (Hunziker & Blankenagel, 2024).

3.5 Method of Data Collection

The online approach of distributing questionnaires is expected to be used for this research. The Excel file will be the respo nse's destination. After downloading, the files will be exported to SPSS and Nvivo for data analysis.

3.6 Validation of the Instrument

The instrument was validated by research experts and was modified based on their comments, observations and recommendations.

4. Data Presentation and Discussion

4.1 Data Presentation

This section presents the data collected from 120 valid questionnaires on the influence of Artificial Intelligence (AI) adoption in public administration. Data are presented using frequency tables and percentages followed by interpretation and discussion of findings.

4.2 Demographic Characteristics of Respondents

Table 4.1: Gender Distribution

Gender	Frequency	Percent (%)
Male	72	60.0
Female	48	40.0
Total	120	100.0

The table indicates a balanced participation, with male respondents slightly higher than females.

Table 4.2: Educational Qualification

Qualification	Frequency	Percent (%)
ND/NCE	22	18.3
HND/BSc	58	48.4
MSc/MBA	32	26.7
PhD	8	6.6
Total	120	100.0

The majority of respondents possessed at least HND/BSc qualifications, indicating adequate knowledge to understand AI-related concepts.

4.3 Awareness of Artificial Intelligence

Table 4.3: Level of Awareness of AI

Response	Frequency	Percent (%)
Very Aware	46	38.3
Aware	54	45.0
Not Sure	12	10.0
Not Aware	8	6.7
Total	120	100.0

A combined 83.3% of respondents were aware or very aware of AI, suggesting a high level of exposure to AI concepts within public institutions.

4.4 Areas of AI Application

Table 4.4: Areas Where AI is Applied

Area	Frequency	Percent (%)
Data Management	34	28.3
Automated Customer Support	28	23.3
Record Processing	24	20.0
Fraud Detection	18	15.0

Area	Frequency	Percent (%)
Decision Support Systems	16	13.4
Total	120	100.0

This shows that AI tools are mainly applied to support administrative efficiency and data handling.

4.5 Perceived Benefits of AI Adoption

Table 4.5: AI Improves Efficiency

Response	Frequency	Percent (%)
Strongly Agree	52	43.3
Agree	44	36.7
Disagree	16	13.3
Strongly Disagree	8	6.7
Total	120	100.0

A total of 80% of respondents agreed that AI improves efficiency, indicating a strong positive perception.

4.6 Challenges Affecting AI Adoption

Table 4.6: Major Challenges

Challenge	Frequency	Percent (%)
Inadequate ICT Infrastructure	38	31.7
Lack of Technical Skills	32	26.6
Resistance to Change	22	18.3
Data Privacy Concerns	16	13.4
Lack of Funding	12	10.0
Total	120	100.0

Infrastructure and skills gaps remain the most critical obstacles.

4.7 Impact of AI on Service Delivery

Table 4.7: AI Has Improved Service Delivery

Response	Frequency	Percent (%)
Strongly Agree	48	40.0
Agree	42	35.0
Disagree	20	16.7
Strongly Disagree	10	8.3
Total	120	100.0

A total of 75% agreed that AI has improved service delivery in their organizations.

4.8 Discussion of Findings

The findings demonstrate that awareness of AI among public servants is relatively high. This suggests that digital transformation initiatives are gradually influencing public administration practices. The study also reveals that AI is mostly applied in operational areas such as data management, record processing, and customer service automation.

Respondents overwhelmingly acknowledged the benefits of AI, particularly in improving efficiency and service delivery. These findings align with existing literature which suggests that AI can enhance transparency, accountability, and decision-making in governance. However, the persistence of infrastructural deficiencies, lack of skills, and resistance to change shows that adoption is still at a developmental stage in many institutions.

5. Conclusion and Recommendations

5.1 Summary of Findings

This study examined the influence of Artificial Intelligence adoption in public administration. Based on the data analyzed, the major findings are summarized as follows:

i. There is a high level of awareness of AI among public sector workers.
ii. AI is mostly applied in data management, record processing and automated service delivery.
iii. Majority of respondents believe that AI improves efficiency and service delivery.
iv. Major challenges hindering AI adoption include poor ICT infrastructure, lack of technical skills, resistance to change, and limited funding.

v. Overall, AI adoption has a positive influence on the effectiveness of public administration.

5.2 Conclusion

The study concludes that Artificial Intelligence has significant potential to transform public administration by improving efficiency, transparency, and quality of service delivery. While awareness and perceived benefits are high, actual implementation remains constrained by infrastructural, institutional, and human capacity challenges.

AI adoption in public administration should therefore be viewed not merely as a technological issue but as an organizational reform process that requires strategic planning, leadership commitment, and continuous capacity development.

5.3 Recommendations

Based on the findings of the study, the following recommendations are made:

i. Government Investment in ICT Infrastructure: Public institutions should prioritize the provision of reliable internet connectivity, modern computer systems, and digital platforms to support AI deployment.
ii. Capacity Building and Training: Regular training programs should be organized to equip public servants with the necessary digital and AI-related skills.
iii. Development of Clear AI Policies: Government should formulate policies and ethical guidelines to regulate the use of AI in public administration, especially concerning data privacy and security.
iv. Change Management Strategies: Management should implement sensitization programs to reduce resistance to new technologies and encourage positive attitudes toward innovation.
v. Pilot AI Projects: Public institutions should start with pilot AI initiatives (such as chatbots, automated document processing, and data analytics systems) before full-scale deployment.

5.4 Suggestions for Further Studies

Future research may focus on:

• Comparative analysis of AI adoption between federal and state public institutions.

References

[1] Gupta, S., & Gupta, A. (2019). Dealing with noise problem in machine learning data-sets: A systematic review. *Procedia Computer Science*, 161, 466-474.
[2] Hinton, G. (2023). How to represent part-whole hierarchies in a neural network. *Neural Computation*, 35(3), 413-452.
[3] Hunziker, S., & Blankenagel, M. (2024). Cross-sectional research design Research design in business and management: A practical guide for students and researchers (pp. 187-199): Springer.
[4] Katekar, V., & Cheruku, J. K. (2024). Public Value-creation Through Application of Artificial Intelligence (AI) in COVID-19 Management: Policy Lessons from India. *Indian Journal of Public Administration*, 70(1), 63-81.
[5] Kieslich, K., Keller, B., & Starke, C. (2022). Artificial intelligence ethics by design. Evaluating public perception on the importance of ethical design principles of artificial intelligence. *Big Data & Society*, 9(1), 20539517221092956.
[6] Leikas, S., & Lönnqvist, J.-E. (2023). Self-other agreement in experience sampling measures. *Social Psychological and Personality Science*, 14(4), 448-458.
[7] Pittin, R. I. (2002). Economy, History and Structure of Katsina Women and Work in Northern Nigeria: Transcending Boundaries (pp. 20-53): Springer.
[8] Robles, P., & Mallinson, D. J. (2023). Catching up with AI: Pushing toward a cohesive governance framework. *Politics & Policy*, 51(3), 355-372.
[9] Rojas, A., & Tuomi, A. (2022). Reimagining the sustainable social development of AI for the service sector: the role of startups. *Journal of Ethics in Entrepreneurship and Technology*, 2(1), 39-54.
[10] Salter, M. B. (2023). Research design Research Methods in Critical Security Studies (pp. 19-27): Routledge.
[11] Shehu, J. (2012). A social and political history of Katsina metropolis, 1960-2007. *Journal of the Historical Society of Nigeria*, 21, 196-202.
[12] Sun, T. Q., & Medaglia, R. (2019). Mapping the challenges of Artificial Intelligence in the public sector: Evidence from public healthcare. *Government information quarterly*, 36(2), 368-383.
[13] Yigitcanlar, T., Agdas, D., & Degirmenci, K. (2023). Artificial intelligence in local governments: perceptions of city managers on prospects, constraints and choices. *Ai & Society*, 38(3), 1135-1150.
[14] Yusriadi, Y., Rusnaedi, R., Siregar, N. A., Megawati, S., & Sakkir, G. (2023). Implementation of artificial intelligence in Indonesia. *International Journal of Data and Network Science*, 7.
[15] Zhou, S., Wang, Y., Zhu, T., & Xia, L. (2020). CT features of coronavirus disease 2019 (COVID-19) pneumonia in 62 patients in Wuhan, China. *American Journal of Roentgenology*, 214(6), 1287-1294.