

UNIJERPS

Unizik Journal of Educational Research and Policy Studies VOL.20 (2);

July-December, 2025 https://unijerps.org

2023 Impact Factor: 6.834; 2022 ***Impact Factor***: 5.156; ***2021 Impact Factor: 5.641;***

2020 Impact Factor: 5.355. *Indexing and Impact Factor URL: http://sjifactor.com/passport.php?id=21363*

CHALLENGES AND PROSPECTS OF HUMAN-AI PARTNERSHIP IN THE DIGITIZATION OF UNIVERSITY ADMINISTRATION IN NIGERIA

[1]Ofem, Wokasor Eni PhD
wokasorofem78@unical.edu.ng 08034615980;

[2]Erom, Francis Peter
franciserom7@gmail.com;

[3]Eyenele, Victoria Okang
victoriaeyenele@gmail.com;

[4]Ekuri, Rachel Ndim
ruthoyeb@yahoo.com
1, 2, 3, 4: Department of Educational Management
Faculty of Educational Foundation Studies
College of Education
University of Calabar, Nigeria

ABSTRACT

This study examined the challenges and prospects of human–artificial intelligence (AI) partnership in the digitization of university administration in Nigeria. Using a conceptual and analytical approach, the paper synthesizes global evidence and Nigerian empirical literature to explore how AI-enabled systems can support key administrative functions such as admissions processing, records management, financial administration, communication, and institutional decision-making. Findings from international scenarios demonstrate that well-governed human–AI collaboration enhances efficiency, transparency, accuracy, and workload reduction in higher education administration. However, the Nigerian context reveals a persistent gap between the acknowledged potential of AI and its limited, fragmented, and weakly coordinated adoption within universities. This gap is largely attributable to inadequate ICT infrastructure, unstable power supply, limited digital and AI literacy among administrative staff, high implementation costs, weak data governance mechanisms, and the absence of coherent national and institutional AI policy frameworks. The paper argues that, despite these constraints, the prospects of human–AI partnership outweigh the challenges when AI is implemented through a human-centered governance model that prioritizes ethical oversight, staff capacity development, and phased deployment. The paper concludes that deliberate investments in infrastructure, policy alignment, and human capacity building are critical to harnessing AI for sustainable administrative digitization and improved institutional effectiveness in Nigerian universities.

Keywords*:* Human–AI partnership, university administration, digitization, artificial intelligence, Nigeria

Introduction

Globally, higher education institutions are progressively tilting toward artificial intelligence (AI) to streamline administrative tasks, improve decision-making, and enhance service delivery to students and staff. This shift reflects mounting pressures on universities to manage increasing enrolments, complex regulatory demands, constrained funding, and heightened expectations for transparency and accountability. AI-enabled administrative systems—such as automated admissions screening, intelligent records management, financial analytics, and conversational agents—have demonstrated the capacity to automate routine processes, generate actionable insights, and support responsive governance structures (Wang et al., 2024; Crompton & Burke, 2023). Consequently, international policy frameworks increasingly emphasize a human-centered AI paradigm, in which AI augments rather than replaces human judgment, ensuring that efficiency gains do not come at the expense of ethical oversight, contextual reasoning, or institutional values (U.S. Department of Education, Office of Educational Technology, 2023).

In developed higher education systems, evidence from universities such as Georgia State University and Georgia Institute of Technology illustrates how deliberate human–AI partnerships can reduce administrative workload, improve student outcomes, and strengthen institutional effectiveness (Goel et al., 2018; Bergman, 2019). These experiences demonstrate that AI's greatest value lies not in automation alone, but in its integration with human expertise, organizational culture, and governance frameworks. Systematic reviews further confirm that AI adoption in higher education administration is most effective where institutions combine technical capacity with staff competence, ethical safeguards, and continuous evaluation (Crompton & Burke, 2023; Wang et al., 2024).

In the African and Nigerian contexts, the promise of AI-enabled digitization is particularly compelling. Nigerian universities operate within environments characterized by large student populations, paper-based administrative processes, slow service delivery, fragmented data systems, and persistent resource constraints. Scholars note that digital transformation holds significant potential for addressing these structural inefficiencies, improving access, modernizing administrative workflows, and supporting evidence-based decision-making (Ajani, 2024; Sarumi, 2024). However, despite growing awareness of AI and digitization, adoption across Nigerian universities remains uneven, fragmented, and largely experimental (Anayochukwu, 2025; Temitope, 2025).

The central problem addressed by this paper is the persistent gap between the recognized potential of artificial intelligence for digitizing university administration in Nigeria and the limited, unsystematic, and weakly governed manner in which AI is currently adopted and utilized. While Nigerian universities increasingly acknowledge the benefits of AI for efficiency,

transparency, accuracy, and workload reduction, institutional practices remain constrained by inadequate ICT infrastructure, unreliable power supply, limited digital literacy among administrative staff, high implementation and maintenance costs, weak data governance, and the absence of comprehensive national and institutional AI policy frameworks (Kayode, 2024; Dede & Jamaica, 2025).

This gap manifests in several ways. First, administrative processes such as admissions, records management, finance, and communication continue to rely heavily on manual or semi-digital systems, resulting in delays, errors, duplication of effort, and limited accountability (Oriji & Nnabuo, 2025). Second, where digital tools are deployed, they are often implemented without sufficient staff training, ethical guidelines, or human oversight mechanisms, raising concerns about data privacy, algorithmic bias, and institutional trust (Sterz et al., 2024). Third, the absence of coordinated policy direction means that AI initiatives are frequently pilot-driven and donor-dependent, lacking sustainability and scalability.

Consequently, Nigerian universities face a paradox: the technologies capable of transforming administrative effectiveness are increasingly available, yet systemic constraints prevent their meaningful integration into everyday administrative practice. Without a deliberate human–AI partnership framework—one that aligns technology with human capacity, governance structures, and contextual realities—the digitization of university administration risks deepening inefficiencies rather than resolving them.

This study examines the challenges and prospects of human–AI partnership in the digitization of Nigerian university administration. It argues that although structural and institutional barriers remain significant, the prospects of human–AI collaboration far outweigh the risks. The paper advances the position that Nigeria's universities can harness AI to modernize administration only through deliberate, human-centered strategies that prioritize infrastructure investment, staff capacity development, ethical governance, and phased implementation. By synthesizing global evidence and Nigerian literature, the paper contributes a contextualized framework for understanding how human–AI partnerships can support sustainable administrative transformation in Nigerian higher education.

Clarification of key concepts

Human-AI partnership

Human-AI partnership refers to a cooperative interaction or collaboration in which human agents (administrators, decision makers, staff) and AI systems (software, intelligent agents, algorithms) work together to achieve tasks that neither could perform optimally alone. The partnership emphasizes complementarity: AI provides computation, pattern recognition, automation, scalability; humans provide judgment, context awareness, ethical reasoning, adaptability. AI can manage complexity that humans cannot track, while humans address what AI cannot — interpretation, nuance, values, meaning.

Human-AI partnership is the collaborative mode whereby digitized tools are integrated into university administration functions (admissions, records, finance, communication, decision-making)" (Hillebrand, Raisch, & Schad, 2025; Jarrahi, Askay, Eshraghi, & Smith, 2022; Okudo, 2022).

In the university context, human-AI partnerships can include:

i. AI-augmented decision support systems used for admissions, forecasting enrollment, and resource allocation.
ii. Automated processing used for student record keeping, scheduling, payroll, and finance management.
iii. AI tools for communication with students and staff such as chatbots, virtual assistants.
iv. Analytics and predictive models used for student performance, dropout risk, and financial planning.

University administration

Evidence from Oriji and Nnabuo (2025), shows that ICT (and by extension AI-aided tools) are being used in management information systems (MIS), personnel records, student records, payroll, financial accounting, etc. Contextually, the domains or functions of university administration include the following:

i. *Admissions*
Processing applications, evaluating candidates, allocating placements. AI in this area could automate much of the paperwork, verification, perhaps initial screening.
ii. *Records management*
Keeping, retrieving, updating student records, staff records, transcripts, academic histories. The move from paper to digital/AI-aided databases is central.
iii. *Finance*
Budgeting, payroll, fees management, financial reporting. AI could help with forecasting, identifying inefficiencies, digitizing vouchers, etc.
iv. *Communication*
Internal communication among staff/administrators; communication with students; dissemination of announcements, handling student queries (via chatbots / virtual assistants); sometimes public relations.
v. *Decision-making*
Strategic and operational decisions: resource allocation, student admissions quotas, staffing, infrastructure investment, policy decisions. Here AI may provide analytics, predictive modeling, scenario simulation to support human decision makers.

Digitization

In higher education, *digitization* refers to converting processes, content, communication, administration, and services from paper-based or manual systems into digital forms. It includes adoption of digital tools, platforms, and systems so that data can be stored, retrieved, processed electronically; processes can be automated or semi-automated; communication can happen over digital networks; analysis and decision support can be derived from data. Digitization is more than simply scanning

paper; it implies workflow change, structural change, cultural change (staff, policy, training), infrastructure (ICT, internet, power), and sustainability (maintenance, support, upgrades) (Chisita, Durodolu, & Ngoaketsi, 2021; Okudo, 2024; Truong, 2022).

To Destiny and Nengi (2025), digitization is the process of converting educational resources from material forms to electronic forms where they can be stored and manipulated by a computer. This process can make higher education more efficient and fast however, there are attendant challenges like poor funding, unstable power supply, limited internet coverage and low teledensity, high cost of equipment, among others.

John and Bamson (2025) also emphasize the adoption of digital/online learning platforms, digital assessment tools, digital communication, management of digital data, etc. The effectiveness of digitization in university administration depends on how well human-AI partnership is designed: technical capacity, infrastructure, policy, training, ethics. Challenges in this relationship emerge when any of: the scope is too limited, staff are unprepared, infrastructure is weak, policy/Governance/ethics are not addressed. Prospects arise when digitization is leveraged via thoughtful human-AI partnership to improve efficiency, transparency, decision quality, reduce cost, scale services, improve access.

Human–AI Partnership in University Administration

Human–AI partnerships in university administration combine machine strengths (automation, scale, pattern detection, prediction) with human strengths (contextual judgement, ethics, oversight) (Sterz, Baum, Biewer, Hermanns, Lauber-Rönsberg, Meinel, & Langer, 2024). The most frequently reported benefits are:

i. Efficiency. AI automates routine workflows (e.g., form processing, scheduling, query triage), shortening turnaround times and allowing staff to focus on higher-value tasks (Wang et al., 2024; Crompton & Burke, 2023).
ii. Transparency. Where AI is used to log decisions and surface data, institutions can make administrative processes and resource allocation more auditable and evidence-based (U.S. Department of Education, 2023).
iii. Accuracy. Automated data validation, record matching, and algorithmic checks can reduce human error in records, admissions sorting, and payroll processes (Wang et al., 2024).
iv. Workload reduction. Chatbots, virtual assistants, and automated workflows can handle large volumes of routine queries and tasks, reduce staff burden and improve responsiveness (Goel et al., 2018).

These benefits are not programmed; they are contingent on good data, appropriate system design, and human oversight. As the U.S. Department of Education notes, effective systems require a "human-centered AI that augments rather than replaces human

judgment" (U.S. Department of Education, Office of Educational Technology, 2023). When designed and governed well, AI acts as a force multiplier for administrative staff rather than a substitute.

Global examples

A few clear, well-documented examples illustrate the above benefits:

i. Georgia State University (GSU) implemented AI chatbots and predictive analytics to triage student questions and flag at-risk students. Reporting indicates GSU reduced advisor workload and improved graduation outcomes; the chatbot project helped the university 'reduce the student–advisor ratio from 800:1 to 300:1,' supporting more timely interventions that correlated with improved persistence and completion (Bergman, 2019; Georgia State University, 2022).

ii. Jill Watson (Georgia Tech). Goel et al. (2018) describe "Jill Watson," an AI virtual teaching assistant originally built on IBM Watson, which answered many routine course forum questions and reduced Turn-Around workload while maintaining student satisfaction with timely responses.

iii. Wider chatbot and automation deployments. Numerous universities worldwide (and several vendors) now use chatbots for admissions, enrollment, financial aid queries, and 24/7 student support; institutional reports and sector reviews describe consistent reductions in response time and staff hours (Cortez, 2018).

Systematic reviews (Wang et al., 2024; Crompton & Burke, 2023) corroborate that common administrative use cases for AI include automated assessment and feedback, virtual assistants, predictive analytics for retention, and administrative decision support — all of which map directly to efficiency, accuracy, transparency, and workload reduction.

Prospects in the Nigerian context

Nigeria's universities face long-standing administrative challenges (paper records, slow processes, staffing strains, limited funds, intermittent power and connectivity). Yet there are clear, realistic opportunities for human–AI partnerships to accelerate digitization:

i. *Student support and admissions:* AI chatbots and automated application processing can relieve bottlenecks during admissions cycles and provide 24/7 answers to routine applicant queries — critical given large applicant pools in many Nigerian institutions (Temitope, 2025; Anayochukwu, 2025).

ii. *Predictive analytics for retention:* Low completion and throughput rates can be partly addressed by early-warning systems that combine administrative records and AI models to flag students needing support — a use case that proved effective at institutions such as GSU and that could be adapted to Nigeria's context (Wang et al., 2024).

iii. *Automating records and finance workflows:* Digital student information systems enhanced with AI for data validation and reconciliation can reduce errors in transcripts, registration, and

finance (Kayode, 2024; Oriji & Nnabuo, 2025).

iv. *Skill development and local innovation:* Several Nigerian universities are already introducing AI curricula and small pilot projects; this local capacity can support context-appropriate AI solutions and partnerships (Anayochukwu, 2025).

The prospects of human-AI partnership in the digitization of university administration in Nigerian are significant but contingent on key prerequisites such as: reliable power and internet, quality data governance and privacy frameworks, staff training for human-AI collaboration, and phased pilot projects with human oversight. Furthermore, awareness and early pilots are growing, but coordinated policy, funding, and capacity building are required to translate pilots into sustainable, scaled administrative transformation (Temitope, 2025; Kayode, 2024).

Position of the Study

This study takes the position that the prospects of human–AI partnership in the digitization of Nigerian university administration outweigh the challenges. While challenges such as weak ICT infrastructure, limited digital literacy, funding constraints, and policy gaps remain significant (Dede & Jamaica, 2025; Kayode, 2024), the potential benefits such as: efficiency, transparency, accuracy, and workload reduction — are too significant to ignore. Evidence from global cases, such as Georgia State University's chatbot deployment that improved student support and reduced administrative burden (Goel et al., 2018), shows that properly implemented AI can transform administrative systems in meaningful ways. Nigerian studies also highlight readiness and emerging awareness, with universities beginning to explore AI applications in admissions, records, and student services (Temitope, 2025; Anayochukwu, 2025).

The study therefore argues that with proper policy support, targeted funding, and sustained capacity building, Nigerian universities can leverage AI to transform administration. Policy frameworks that emphasize human-centered AI, as recommended by the U.S. Department of Education (2023), must guide implementation to ensure ethical and responsible use. Investments in digital infrastructure and staff training are critical prerequisites, as is the development of localized AI solutions suited to Nigeria's educational context. Ultimately, by embracing a deliberate human–AI partnership model, Nigerian universities can overcome systemic challenges and position themselves for global competitiveness in higher education administration.

Conclusion

This paper concludes that although Nigerian universities face substantial infrastructural, policy, and capacity-related barriers to AI-driven administrative digitization, the prospects of human–AI partnership remain compelling. Evidence from global and local contexts indicates that AI, when embedded within human-centered governance frameworks, can significantly enhance administrative efficiency, transparency, accuracy, and workload management. Sustainable gains, however, depend on

deliberate investments in infrastructure, staff capacity development, ethical oversight, and phased implementation strategies. With coordinated policy support and institutional leadership, human–AI collaboration can become a transformative driver of effective and globally competitive university administration in Nigeria.

Way forward

Drawing from the analysis presented in this paper, a way forward for addressing the gap between AI potential and administrative practice in Nigerian universities is proposed as follows:

1. *Development of a national human-centered AI policy for higher education:*
   Nigeria requires a coordinated national policy framework that articulates standards for ethical, transparent, and accountable AI use in university administration. Such a policy should emphasize human oversight, data protection, algorithmic accountability, and alignment with national education goals.
2. *Strategic investment in digital infrastructure:*
   Federal and state governments, alongside university governing councils, must prioritize sustained investment in ICT infrastructure, broadband connectivity, and reliable power supply. Without this foundational layer, AI-enabled digitization efforts will remain fragmented and ineffective.
3. *Capacity building and human–AI literacy for administrators:*
   Continuous professional development programmes should be instituted to build digital and AI literacy among university administrators. Training should focus not only on technical skills but also on interpreting AI outputs, exercising judgment, and managing ethical implications.
4. *Phased pilot projects with evaluation and scaling mechanisms:*
   Universities should adopt phased AI pilot projects in core administrative areas such as admissions, records management, and student support. Each pilot should include monitoring and evaluation frameworks to assess effectiveness, risks, and scalability before wider deployment.
5. *Strengthening data governance and privacy frameworks:*
   Robust data governance structures are essential for ensuring data quality, security, and trust in AI systems. Universities must establish clear protocols for data collection, storage, access, and use, consistent with ethical and legal standards.
6. *Fostering public–private partnerships and local innovation:*
   Partnerships with technology firms, startups, and research institutions can support context-sensitive AI solutions tailored to Nigeria's higher education environment. Such collaborations can reduce costs, build local capacity, and enhance sustainability.

7. Institutional leadership and change management:
   University leadership must actively champion human–AI partnership initiatives, manage organizational change, and cultivate a culture of innovation and trust. Administrative digitization is as much a cultural transformation as it is a technical one.

REFERENCES

Ajani, O. A. (2024). Exploring digital transformation and future trends in higher education development across African nations. *Journal of Pedagogical Sociology and Psychology, 6*(3), 34–48. https://doi.org/10.33902/jpsp.202427374

Anayochukwu, A. A. (2025). *Artificial intelligence awareness and adoption patterns in Nigerian universities* (White paper). IIARD Journals. https://iiardjournals.org/get/WJIMT/VOL.%209%20NO.%205%202025/Artificial%20Intelligence%20Awareness%20101-114.pdf

Bergman, B. (2019, September 21). *How a chatbot boosted graduation rates at Georgia State*. *Axios*. Retrieved from https://www.axios.com/2019/09/21/chatbot-colleges-academic-performance

Chisita, C. T., Durodolu, O. O., & Ngoaketsi, J. (2021). Evaluating the Processes and Procedure of Digitalization Workflow. In *Digital Libraries Advancing Open Science* (S. Vancauwenbergh, Ed.). IntechOpen.)

Cortez, M. B. (2018, March 9). Universities deploy chatbots to aid students in the admissions process and beyond. *EdTech*. https://edtechmagazine.com/higher/article/2018/03/universities-deploy-chatbots-aid-students-admissions-process-and-beyond

Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: The state of the field. *International Journal of Educational Technology in Higher Education, 20*, Article 22. https://doi.org/10.1186/s41239-023-00392-8

Dede, D. & Jamaica, N. J. (2025). *Digitalization of Higher Education in Nigeria: Benefits and Challenges. Scientific Journal of Educational Management, Research and Law, 3*(1), 52-61.

Georgia State University. (2022, March 21). *Classroom chatbot improves student performance, study says*. News Hub, Georgia State University. Retrieved from https://news.gsu.edu/2022/03/21/classroom-chatbot-improves-student-performance-study-says/

Goel, A. K., Polepeddi, L., Dede, C., Richards, K., & Saxberg, B. (2018). *Jill Watson: A virtual teaching assistant for online education* (DiLab/Georgia Tech technical report). https://dilab.gatech.edu/test/wp-content/uploads/2022/06/GoelPoleped

di-DedeRichardsSaxberg-JillWatson-2018.pdf

Hillebrand, L., Raisch, S., & Schad, J. (2025). *Managing with Artificial Intelligence: An Integrative Framework. Academy of Management Annals, 19*(1), 343-375. https://doi.org/10.5465/annals.2022.0072

Jarrahi, M. H., Askay, D., Eshraghi, A., & Smith, P. (2022). Artificial intelligence and knowledge management: A partnership between human and AI. *Business Horizons, 66*(1), 87-99. https://doi.org/10.1016/j.bushor.2022.03.002

John, I. & Bamson, T. (2025). Digitizing Higher Education Management in Nigeria: Challenges and Opportunities. *Journal of Association of Educational Management and Policy Practitioners, 6*(2).

Kayode, A. E. (2024). The impact and challenges of artificial intelligence on universities in Southwestern Nigeria. In *Proceedings of ECE 2024 Conference* (pp. xx–xx). IAFOR/Conference proceedings. https://papers.iafor.org/wp-content/uploads/papers/ece2024/ECE2024_82271.pdf

Okudo, C.O. (2024). Influence of Attachment Styles on The Development of Adolescents from Anambra State Nigeria. Sapientia Global Journal of Arts, Humanities and Development Studies; 7(4) 235-243.

Okudo, C.O. (2024). Influence of Parental Career on the Psychosocial Development of Secondary School Students in Awka South Local Government Area of Anambra State. *Sapientia Foundation Journal of Education, Sciences and Gender Studies;* 6(4) 161-166.

Okudo, O. C. (2021). Elements Of Psychological Adjustment Among Contemporary Nigerian Adolescents. *IMT International Journal of The Arts and Sciences*, *4*(3), 88-109.

Okudo, O. C. (2022). Relationship between causes of teenage pregnancy and family background characteristic of parents in south eastern states of Nigeria. *Sapientia Global Journal of Arts, Humanities and Development Studies (SGOJAHDS)*, 5 (3) 69–80.

Okudo, O. C. and Obumse, N.A. (2022). Influence Of Parenting Styles and Nurturance on The Psychosocial Development of Adolescents in Enugu State: Implication for Employability and Global Competitiveness in the New Normal. *Sapientia Global Journal of Arts, Humanities and Development Studies (SGOJAHDS)*, 5 (3) 59– 68.

Oriji, A., & Nnabuo, C. N. (2025). Analysis of the effects of implementing digital technologies in administration of higher educational institutions in Nigeria. *Interdisciplinary Journal of Education and Humanities, 12*(1). https://sadijournals.org/index.php/ijeh/article/view/987

Sarumi, O. O. (2024). The future of learning: How digital transformation can shape education in Nigeria. *International Journal of Advances in Engineering*

and Management, 6(9), 696–709. https://doi.org/10.35629/5252-0609696709

Sterz, S., Baum, K., Biewer, S., Hermanns, H., Lauber-Rönsberg, A., Meinel, P., & Langer, M. (2024). *On the Quest for Effectiveness in Human Oversight: Interdisciplinary Perspectives*. arXiv. https://doi.org/10.48550/arXiv.2404.04059

Temitope, A. B. (2025). Artificial intelligence in Nigerian higher education. *All Multidisciplinary Journal*, (May 2025), 1–18. https://www.allmultidisciplinaryjournal.com/uploads/archives/20250517182657_MGE-2025-3-111.1.pdf

Truong, Q. R. (2022). The Impact of Digital Transformation on Environmental Sustainability. *Advances in Multimedia, 2022*. https://doi.org/10.1155/2022/6324325

U.S. Department of Education, Office of Educational Technology. (2023). *Artificial intelligence and the future of teaching and learning: Insights and recommendations.* https://www.ed.gov/sites/ed/files/documents/ai-report/ai-report.pdf

Wang, S., Wang, F., Zhu, Z., Wang, J., Tran, T., & Du, Z. (2024). Artificial intelligence in education: A systematic literature review. *Expert Systems with Applications, 252*, Article 124167. https://doi.org/10.1016/j.eswa.2024.124167