JETMASE
Journal of Emerging Trends in Management Sciences and Entrepreneurship
Volume 8(3), Pages 244-254 July-Sept Edition, 2026
ISSN: 2384-762X
https://www.jetmase.com

Artificial Intelligence Tools and Performance of Academic Staff in Federal Universities, South-East Nigeria

Ohuonu, V.C.[1], Ibekwe, A.I. (PhD)[2] & Williams, Gbenga (Ph.D)[3*]
[1&2]Department of Business Administration, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State, Nigeria
[3]Department of Business Administration, Hezekiah University, Umudi Nkwerre, Imo State, Nigeria
Corresponding Email: williamsgbenga80@gmail.com

ABSTRACT: This study examined the effect of artificial intelligence (AI) tools on the performance of academic staff in Federal Universities, South-East Nigeria. The study was motivated by growing uncertainty over whether the increasing integration of AI into academic work is genuinely enhancing staff performance, given persistent challenges such as unequal access to AI infrastructure, limited AI literacy among lecturers, and the perceived complexity of some AI systems. Specifically, the study examined the effect of access to AI tools on teaching effectiveness of academic staff; ascertained the effect of AI literacy on research productivity of academic staff; and evaluated the effect of perceived flexibility of AI systems on the adoption rate of AI tools among academic staff in Federal Universities, South-East Nigeria. Three research questions and three hypotheses were formulated in line with the study objectives. The study was anchored on the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). A descriptive survey research design was adopted. The population comprised 11,640 academic staff drawn from five Federal Universities in South-East Nigeria, with a sample size of 375 determined using the Krejcie and Morgan (1970) table. Data were analyzed using descriptive statistics and simple linear regression at a 0.05 level of significance with the aid of SPSS version 23. Findings revealed that all variables (access to AI tools had a strong, positive, AI literacy and perceived flexibility of AI systems) had very strong, positive, and statistically significant effect on the adoption rate of AI tools. The study concluded that access to AI tools, AI literacy, and the perceived flexibility of AI systems are critical determinants of academic staff performance in Federal Universities in South-East Nigeria. It was recommended that universities sustain investment in AI infrastructure, organize regular AI training and capacity-building programmes, and prioritise the design and adoption of user-friendly AI platforms for academic use.

Keywords: Artificial Intelligence Tools, Access to AI Tools, AI Literacy, Perceived Flexibility, Teaching Effectiveness, Research Productivity, Academic Staff Performance

INTRODUCTION

Artificial Intelligence (AI) has evolved rapidly over the past decade, moving from a largely theoretical concept into a practical technology that now shapes teaching, research, and administration across higher education systems worldwide. Advances such as large-scale language models, intelligent tutoring systems, automated grading platforms, and AI-powered research assistants have opened new possibilities for how academic staff deliver instruction and conduct scholarly work (Zawacki-Richter,

Marín, Bond & Gouverneur, 2019). In higher education particularly, AI tools are increasingly viewed as instruments capable of personalising learning, automating routine administrative tasks, and supporting evidence-based research, thereby reshaping the traditional roles of lecturers and researchers.

In Nigeria, Federal Universities have shown growing interest in AI as part of a broader digital transformation agenda, with academic staff progressively exposed to AI-based plagiarism checkers, virtual research assistants, and adaptive learning platforms (Okoye & Ogbonna, 2022). However, the extent to which this exposure translates into measurable improvements in staff performance remains uncertain, particularly in South-East Nigeria, where infrastructural disparities, funding constraints, and uneven digital readiness across institutions may limit the benefits of AI adoption.

Three factors are of particular interest in this regard: the extent to which academic staff can readily access AI tools; the depth of their knowledge and confidence in using such tools, commonly referred to as AI literacy; and the degree to which these systems are perceived as easy and flexible to use. Where access is limited, knowledge is inadequate, or systems are perceived as cumbersome, the anticipated gains in teaching effectiveness, research output, and technology adoption may fail to materialise, regardless of how sophisticated the underlying AI tools are (Nwankwo & Eze, 2023; Chukwu & Obi, 2022).

It is against this backdrop that this study investigates how access to AI tools, AI literacy, and the perceived flexibility of AI systems shape teaching effectiveness, research productivity, and the adoption rate of AI tools among academic staff in Federal Universities in South-East Nigeria.

Statement of the Problem

The integration of Artificial Intelligence into higher education holds considerable promise for improving teaching, research, and administrative efficiency. However, it remains unclear whether academic staff in Federal Universities in South-East Nigeria are genuinely benefiting from this integration, or whether structural and perceptual barriers are undermining its intended effect. Three specific issues underlie this problem. First, disparities in access to AI tools across institutions create inequality in the extent to which lecturers can incorporate such tools into their teaching, potentially widening performance gaps among academic staff. Second, many academic staff possess limited AI literacy, which constrains their ability to exploit available AI systems for research purposes such as data analysis, literature synthesis, and academic writing support, thereby limiting research output. Third, where AI systems are perceived as complex, unintuitive, or effortful to use, academic staff may be discouraged from adopting them altogether, irrespective of their potential usefulness.

Existing literature has largely focused on the general benefits and applications of AI in education without adequately isolating how access, literacy, and perceived flexibility specifically drive performance outcomes among academic staff in Federal Universities in South-East Nigeria. This study seeks to address this gap by empirically examining these three relationships.

Objectives of the Study

The broad objective of the study was to examine the effect of artificial intelligence tools on the performance of academic staff in Federal Universities, South-East Nigeria. Specifically, the study sought to:

i. examine the effect of access to AI tools on teaching effectiveness of academic staff in Federal Universities, South-East Nigeria;

ii. ascertain the effect of AI literacy on research productivity of academic staff in Federal Universities, South-East Nigeria;
iii. evaluate the effect of perceived flexibility of AI systems on the adoption rate of AI tools by academic staff in Federal Universities, South-East Nigeria.

Hypotheses

The following hypotheses were formulated in null form to guide the study:

H01: Access to AI tools does not significantly affect teaching effectiveness of academic staff in Federal Universities, South-East Nigeria.

H02: AI literacy does not significantly affect research productivity of academic staff in Federal Universities, South-East Nigeria.

H03: Perceived flexibility of AI systems does not significantly affect the adoption rate of AI tools among academic staff in Federal Universities, South-East Nigeria.

LITERATURE REVIEW

Artificial Intelligence Tools

Artificial Intelligence refers to computer-based systems designed to simulate human intelligence, enabling machines to perform tasks such as decision-making, problem-solving, pattern recognition, and natural language understanding (Akinola&Akinyele, 2023). In education, AI tools include intelligent tutoring systems, adaptive learning platforms, plagiarism detection software, automated grading systems, and virtual research assistants, all of which support instructional delivery and scholarly work (Zawacki-Richter et al., 2019). For academic staff, AI functions both as a pedagogical aid and a research enabler, particularly in data collection, analysis, and dissemination, although realizing these benefits depends on the availability of the tools, staff knowledge of how to use them, and the ease with which the systems can be operated (Eze & Chukwu, 2023).

Access to AI Tools

Access to AI tools refers to the extent to which academic staff are able to obtain, use, and interact with AI-powered applications and digital platforms for instructional delivery and research activities (Eze & Chukwu, 2021). It encompasses both physical availability, such as infrastructure, software, and internet connectivity, and institutional readiness, including policy support, funding, and licensing arrangements (Ogunyemi&Adeola, 2022).

Akinwale and Obasi (2023) note that access is not limited to hardware and software but also involves digital literacy and administrative protocols; even where AI tools are physically available, restrictive institutional practices or poor connectivity can hinder effective use. Nwankwo and Uche (2020) further observe that lecturers with reliable access to user-friendly AI platforms are more likely to engage in interdisciplinary research and deliver more interactive lectures, underscoring the link between access and performance outcomes.

AI Literacy

AI literacy denotes the level of awareness, understanding, and technical competence that academic staff possess regarding the functions, applications, and implications of AI technologies (Adigwe&Nwachukwu, 2020). It comprises both declarative knowledge, an understanding of what AI is and does, and procedural knowledge, the ability to apply AI tools in practical academic tasks such as course design and data analysis (Chukwu& Obi, 2022). Nwankwo and Eze (2023) argue that AI-literate academic staff are more likely to explore predictive analytics and automated research tools, while a lack of AI knowledge tends to generate anxiety and resistance that limit adoption. Because AI technologies evolve rapidly, AI literacy is inherently dynamic, requiring continuous learning and

structured training to sustain staff competence (Akinola&Akinyele, 2023).

Perceived Flexibility of AI Systems

Perceived flexibility, derived from the Technology Acceptance Model's Perceived Ease of Use construct, refers to the extent to which an individual believes that using a particular system will be free of effort (Davis, 1989). In the context of AI, it reflects how intuitive and user-friendly a system appears to academic staff, which in turn influences whether the technology is accepted and consistently used (Boateng, Adam, Okoe&Anning-Dorson, 2021). Al-Okaily, Alqudah, Matar, Lutfi and Taamneh (2022) note that perceived flexibility encompasses intuitive interfaces, minimal learning curves, and clear system operations, all of which reduce psychological resistance to adoption. Okonkwo and Eze (2023) similarly found that AI systems with responsive interfaces and simple data-input methods recorded higher rates of adoption among Nigerian academic staff than complex or poorly designed platforms.

Teaching Effectiveness, Research Productivity and Adoption Rate of AI Tools

Teaching effectiveness represents the ability of academic staff to deliver course content clearly, engage students actively, and achieve desired learning outcomes, particularly with the support of AI technologies. Research productivity refers to the quantity and quality of scholarly outputs, including journal publications and collaborative research activities facilitated through AI utilisation. Adoption rate of AI tools reflects the extent to which academic staff take up and consistently use available AI systems in their teaching and research routines. Together, these three outcomes represent measurable dimensions of academic staff performance in an increasingly AI-integrated higher education environment.

Theoretical Framework

Technology Acceptance Model (TAM)

This study is anchored on the Technology Acceptance Model (TAM), originally developed by Davis (1989) and adapted from the Theory of Reasoned Action. TAM posits that two primary constructs, Perceived Usefulness and Perceived Ease of Use, determine an individual's intention to adopt a new technology. Perceived Usefulness refers to the degree to which a person believes that using a system will enhance their performance, while Perceived Ease of Use reflects the belief that using the system will be free of effort. In this study, access to AI tools and AI literacy are conceptually linked to the conditions under which usefulness can be realised, while perceived flexibility corresponds directly to the ease-of-use construct that shapes adoption behaviour among academic staff.

Unified Theory of Acceptance and Use of Technology (UTAUT)

The study is further supported by the Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh, Morris, Davis and Davis (2003), which extends TAM by incorporating performance expectancy, effort expectancy, social influence, and facilitating conditions as determinants of technology use. UTAUT is particularly relevant to this study because it accounts for institutional facilitating conditions, such as access to infrastructure and technical resources, that determine whether academic staff can translate favourable attitudes toward AI into actual usage and improved performance outcomes.

Empirical Review

Nwankwo and Uche (2020) examined the relationship between access to digital research tools and academic productivity among lecturers in South-East Nigerian universities. Using a survey of 210 lecturers, the study found that reliable access to digital platforms significantly predicted research engagement and publication output, lending support to the view that infrastructural

access is a precondition for performance gains from technology adoption.

In a related study, Gbenga and Okeke (2025) investigated economic factors of corporate sustainability and the performance of foam manufacturing firms, finding that firm-level investment in resources and infrastructure significantly predicted operational performance. Although situated in a manufacturing context, the study's core finding, that the availability of adequate resources translates into measurable performance improvements, parallels the present study's expectation that institutional investment in AI infrastructure and access should similarly enhance teaching effectiveness among academic staff.

Akinola and Akinyele (2023) studied the influence of AI knowledge on the research output of academic staff in selected Nigerian universities. The study, which surveyed 180 lecturers, found a significant positive relationship between AI literacy and the frequency of AI-assisted research activities, including data analysis and literature synthesis. The authors concluded that structured training programmes are necessary to convert general awareness of AI into practical research competence.

Similarly, Okafor, Okekeand Williams (2026) examined talent acquisition practices and innovative business success among outsourcing firms in Delta State, Nigeria, and found that the acquisition and development of specialised talent significantly predicted firms' capacity for innovation. This finding reinforces the logic that, as with specialised talent in business organisations, the cultivation of AI-specific knowledge and competence among academic staff should be expected to enhance innovative and productive academic outcomes such as research output.

Okonkwo and Eze (2023) explored the effect of system usability on AI adoption among lecturers in Nigerian universities. Using a sample of 240 respondents, the study found that perceived ease of navigating AI dashboards and interfaces significantly predicted the frequency and consistency of AI tool usage, confirming that usability concerns are central to sustained technology adoption in academic settings.

In the management literature, Okeke, Akpamgbo, Dike and Williams (2025) investigated workplace management and organisational productivity among aluminium manufacturing firms in Anambra State, Nigeria, and found that well-structured, easy-to-navigate workplace systems significantly enhanced productivity. This is consistent with the present study's expectation that AI systems perceived as flexible and easy to use are more readily adopted and translate into improved outcomes.

Furthermore, Okeke and Williams (2025), examining social and environmental factors of corporate sustainability and performance of plastic manufacturing firms, found that social factors, including staff attitudes and organisational support, significantly shaped firm performance outcomes. This finding lends indirect support to the view that staff perceptions, such as perceived flexibility, are important social-psychological determinants of how readily new systems, including AI tools, are embraced and sustained within an organization.

METHODOLOGY

This study adopted a descriptive survey research design, considered appropriate for collecting quantitative data from a defined population to assess relationships between variables. The study was conducted among academic staff in Federal Universities in South-East Nigeria, a region comprising Abia, Anambra, Ebonyi, Enugu, and Imo States. The population of the study comprised 11,640 academic staff drawn from five Federal Universities: Nnamdi

Azikiwe University, Awka (2,657); University of Nigeria, Nsukka (3,010); Federal University of Technology, Owerri (2,135); Alex Ekwueme Federal University Ndufu-Alike, Ebonyi State (1,245); and Michael Okpara University of Agriculture, Umudike (2,593).

The sample size of 375 was determined using the Krejcie and Morgan (1970) sample size determination table. Proportional samples were drawn from each university based on the ratio of its academic staff population to the total population, using a stratified random sampling technique that ensured proportionate representation across institutions. A structured questionnaire, divided into a demographic section and a section covering the study variables, was administered both physically and electronically. The instrument was subjected to face and content validation by experts in Educational Measurement and Evaluation and in AI and Human Resource Management. A pilot study involving 30 academic staff outside the study area yielded a Cronbach's Alpha reliability coefficient of 0.87, confirming that the instrument was highly reliable.

Of the 375 questionnaires administered, 350 were correctly completed and found valid for analysis, representing a response rate of 93.3 percent. Data were analysed using descriptive statistics, including mean, frequency, and percentage, to summarise demographic characteristics and responses to the research questions, while simple linear regression was used to test the hypotheses at a 0.05 level of significance with the aid of SPSS version 23. The regression models tested were specified as follows:

Model 1: $TE = \beta0 + \beta1AIT + \varepsilon$ (Effect of access to AI tools on teaching effectiveness)
Model 2: $RP = \beta0 + \beta2KAI + \varepsilon$ (Effect of AI literacy on research productivity)
Model 3: $AR = \beta0 + \beta3PEU + \varepsilon$ (Effect of perceived flexibility on adoption rate of AI tools)
Where TE = Teaching Effectiveness; RP = Research Productivity; AR = Adoption Rate of AI Tools; AIT = Access to AI Tools; KAI = AI Literacy; PEU = Perceived Flexibility; $\beta0$ = constant; $\beta1$–$\beta3$ = regression coefficients; and ε = error term.

RESULTS AND DISCUSSION

Demographic Characteristics of Respondents

The demographic analysis showed that 60.0% of respondents were male while 40.0% were female, indicating that male academic staff constituted the majority of the study sample. In terms of marital status, 52.9% of respondents were married and 32.9% were single, with smaller proportions widowed, divorced, or separated. Regarding academic qualification, 42.9% of respondents held a Master's degree, 31.4% held a Ph.D., and 22.9% held a Bachelor's degree, suggesting that the sample was predominantly composed of well-qualified academic professionals capable of providing informed responses on AI-related matters.

Hypothesis One: Access to AI Tools and Teaching Effectiveness

H01: Access to AI tools does not significantly affect teaching effectiveness of academic staff in Federal Universities, South-East Nigeria.

Descriptive results showed that academic staff generally reported moderate-to-high access to AI tools, with item mean scores ranging from 3.78 to 3.93, and correspondingly high ratings for teaching effectiveness, with means ranging from 3.81 to 3.93. The regression analysis presented in Tables 1 to 3 revealed a strong positive relationship between access to AI tools and teaching effectiveness.

Table 1: Model Summary for Access to AI Tools and Teaching Effectiveness

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.612	0.375	0.373	0.68421

Source: SPSS Version 23 (2026)

Table 2: ANOVA for Access to AI Tools and Teaching Effectiveness

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	128.642	1	128.642	274.823	.000
Residual	214.358	348	0.478		
Total	343.000	349			

Source: SPSS Version 23 (2026)

Table 3: Regression Coefficients for Access to AI Tools and Teaching Effectiveness

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	1.214	0.147	-	8.259	.000
Access to AI Tools	0.583	0.035	0.612	16.580	.000

Source: SPSS Version 23 (2026). Dependent Variable: Teaching Effectiveness

The regression coefficient (R = 0.612) confirms a strong positive relationship between access to AI tools and teaching effectiveness, with the model explaining 37.5% of the variation in teaching effectiveness ($R^2 = 0.375$). The standardized beta value of 0.612 ($t = 16.580$, $p < 0.05$) shows that access to AI tools is a strong, statistically significant predictor of teaching effectiveness. Accordingly, the null hypothesis (H01) is rejected. This finding implies that when academic staff have adequate access to AI-driven tools such as automated grading systems and content generation platforms, their instructional delivery and classroom engagement improve significantly. This aligns with Nwankwo and Uche (2020), who found that reliable access to digital platforms significantly predicted academic engagement, and resonates with Gbenga and Okeke (2025), whose study of foam manufacturing firms similarly demonstrated that adequate access to organisational resources translates into measurable performance gains, underscoring access as a foundational precondition for any technology to meaningfully influence performance outcomes.

Hypothesis Two: AI Literacy and Research Productivity

H02: AI literacy does not significantly affect research productivity of academic staff in Federal Universities, South-East Nigeria.

Table 4: Model Summary for AI Literacy and Research Productivity

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.658	0.433	0.431	0.59247

Source: SPSS Version 23 (2026)

Table 5: ANOVA for AI Literacy and Research Productivity

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	152.906	1	152.906	435.728	.000
Residual	200.094	348	0.447		
Total	353.000	349			

Source: SPSS Version 23 (2026)

Table 6: Regression Coefficients for AI Literacy and Research Productivity

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	0.984	0.132	-	7.455	.000
AI Literacy	0.671	0.032	0.658	20.876	.000

Source: SPSS Version 23 (2026). Dependent Variable: Research Productivity

The results show an R value of 0.658, indicating a strong positive relationship between AI literacy and research productivity, with AI literacy explaining 43.3% of the variation in research productivity ($R^2 = 0.433$). The standardized beta of 0.658 ($t = 20.876$, $p < 0.05$) confirms that AI literacy is a strong, significant predictor of research productivity, leading to the rejection of the null hypothesis (H02). This finding suggests that academic staff with greater AI knowledge are better able to utilise research tools for data analysis, literature synthesis, and collaborative scholarship, thereby producing higher research output. This is consistent with Akinola and Akinyele (2023), who found that AI knowledge significantly predicted AI-assisted research activity among Nigerian academic staff, and aligns with the broader logic advanced by Okafor, Okeke and Williams (2026), whose study of talent acquisition and innovative business success found that the cultivation of specialised competence is a critical driver of innovative output, mirroring the role that AI literacy plays in enhancing scholarly productivity.

Hypothesis Three: Perceived Flexibility of AI Systems and Adoption Rate of AI Tools

H03: Perceived flexibility of AI systems does not significantly affect the adoption rate of AI tools among academic staff in Federal Universities, South-East Nigeria.

Table 7: Model Summary for Perceived Flexibility and Adoption Rate of AI Tools

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.701	0.491	0.489	0.52136

Source: SPSS Version 23 (2026)

Table 8: ANOVA for Perceived Flexibility and Adoption Rate of AI Tools

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	173.248	1	173.248	637.981	.000
Residual	179.752	348	0.401		

Model	Sum of Squares	df	Mean Square	F	Sig.
Total	353.000	349			

Source: SPSS Version 23 (2026)

Table 9: Regression Coefficients for Perceived Flexibility and Adoption Rate of AI Tools

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	0.762	0.119	-	6.403	.000
Perceived Flexibility	0.719	0.028	0.701	25.259	.000

Source: SPSS Version 23 (2026). Dependent Variable: Adoption Rate of AI Tools

The results show an R value of 0.701, the strongest relationship among the three hypotheses tested, indicating that perceived flexibility of AI systems accounts for 49.1% of the variation in the adoption rate of AI tools ($R^2 = 0.491$). The standardized beta of 0.701 ($t = 25.259$, $p < 0.05$) confirms that perceived flexibility is a very strong, statistically significant predictor of AI adoption, and the null hypothesis (H03) is accordingly rejected. This finding strongly supports the Technology Acceptance Model's proposition that ease of use directly shapes technology adoption behaviour: when academic staff perceive AI systems as simple and intuitive, they are considerably more likely to integrate them into routine teaching and research activities. This is consistent with Okonkwo and Eze (2023), who found that usability significantly predicted AI adoption among lecturers, and is reinforced by Okeke, Akpamgbo, Dike and Williams (2025), whose study of workplace management among aluminium manufacturing firms found that well-structured, easy-to-navigate systems significantly enhanced organisational productivity, as well as by Okeke and Williams (2025), whose finding that social and attitudinal factors shape firm performance parallels the role that staff perceptions of usability play in determining whether new academic technologies are embraced or resisted.

Summary of Findings

This study examined the relationships between access to AI tools, AI literacy, and perceived flexibility of AI systems, and their respective effects on teaching effectiveness, research productivity, and adoption rate of AI tools among academic staff in Federal Universities in South-East Nigeria. A sample of 350 academic staff was surveyed and simple linear regression was used to test the hypotheses. The key findings are summarised as follows:

(i) Access to AI tools has a strong, positive, and statistically significant effect on teaching effectiveness of academic staff ($\beta = 0.612$, $t = 16.580$, $p < 0.05$).
(ii) AI literacy has a strong, positive, and statistically significant effect on research productivity of academic staff ($\beta = 0.658$, $t = 20.876$, $p < 0.05$).
(iii) Perceived flexibility of AI systems has a very strong, positive, and statistically significant effect on the adoption rate of AI tools among academic staff ($\beta = 0.701$, $t = 25.259$, $p < 0.05$).

CONCLUSION

The study concludes that access to AI tools, AI literacy, and the perceived flexibility of AI systems are critical determinants of academic staff performance in Federal Universities in South-East Nigeria. Where academic staff can readily access relevant AI applications, possess adequate knowledge of how to use them, and perceive

the systems as simple and user-friendly, teaching effectiveness improves, research productivity rises, and adoption of AI tools deepens. Conversely, gaps in access, knowledge, or usability constrain the extent to which AI can meaningfully enhance academic performance, regardless of how advanced the underlying technology may be. The findings reinforce the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology by demonstrating that resource availability, competence, and perceived ease of use jointly shape technology-driven performance outcomes in academic settings. Based on the findings, the following recommendations are made:

i. Federal Universities should improve access to AI tools by investing in institution-wide AI platforms, including learning management systems and research support software, to enhance teaching effectiveness.
ii. University management should organise regular AI training and capacity-building workshops to strengthen academic staff's AI literacy and, in turn, boost research productivity.
iii. Developers and institutional ICT units should prioritise user-friendly, intuitive AI systems with minimal technical barriers, and provide clear guidelines, to encourage higher and more sustained adoption rates among academic staff.

Contribution to Knowledge

This study contributes to knowledge in the following ways. Empirically, it provides focused evidence on how access, literacy, and perceived flexibility specifically drive teaching effectiveness, research productivity, and technology adoption among academic staff, extending literature that has largely examined AI adoption in education in general terms. Geographically, by concentrating on Federal Universities in South-East Nigeria, the study provides region-specific evidence that accounts for the unique infrastructural and institutional realities of the area. Theoretically, the study reinforces the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology by demonstrating their applicability in explaining AI adoption and performance outcomes within a Nigerian higher education context.

References

Adigwe, C., & Nwachukwu, U. (2020). Artificial intelligence literacy and digital competence among tertiary institution staff in Nigeria. *Journal of Educational Technology Research*, 12(2), 45–58.

Akinola, T., & Akinyele, S. (2023). Artificial intelligence knowledge and research output of academic staff in selected Nigerian universities. *Nigerian Journal of Educational Technology*, 15(1), 22–39.

Akinwale, O., & Obasi, C. (2023). Beyond infrastructure: Digital literacy, licensing, and connectivity as determinants of AI access in universities. *African Journal of Information Systems*, 15(3), 210–226.

Al-Okaily, M., Alqudah, H., Matar, A., Lutfi, A., & Taamneh, A. (2022). Dataset on the acceptance of e-learning system among universities students amid the COVID-19 pandemic.*Data in Brief*, 40, 107724.

Boateng, H., Adam, D. R., Okoe, A. F., & Anning-Dorson, T. (2021). Assessing the determinants of internet banking adoption intentions: A social cognitive theory perspective.*Computers in Human Behavior*, 65, 468–478.

Chukwu, F., & Obi, K. (2022). Declarative and procedural artificial intelligence knowledge among lecturers in South-East Nigeria.*Journal of*

Higher Education Policy and Management, 44(3), 289–305.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology.*MIS Quarterly*, 13(3), 319–340.

Eze, C., &Chukwu, F. (2021).Access to artificial intelligence tools and institutional readiness in Nigerian universities.*International Journal of Educational Development*, 41(2), 112–128.

Eze, C., & Chukwu, F. (2023). Artificial intelligence in academia: Automation, autonomy, and the future of academic work. *Journal of Higher Education Innovation*, 9(1), 33–50.

Gbenga, W., & Okeke, C. O. (2025). Economic factors of corporate sustainability and performance of foam manufacturing firms. *British Journal of Marketing Studies*, 13(3), 49–71.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities.*Educational and Psychological Measurement*, 30(3), 607–610. https://doi.org/10.1177/001316447003000308

Nwankwo, C., & Eze, A. (2023).Artificial intelligence literacy and academic performance of lecturers in Federal Universities, South-East Nigeria.*Journal of Digital Learning and Teaching*, 6(2), 88–104.

Nwankwo, C., & Uche, P. (2020).Digital tool access and academic productivity among lecturers in South-East Nigerian universities.*Nigerian Journal of Educational Research*, 18(4), 155–171.

Ogunyemi, T., & Adeola, F. (2022). Digital infrastructure and intelligent systems in higher education: A review. *West African Journal of Education Technology*, 10(1), 60–77.

Okafor, A. E., Okeke, C. O., & Williams, G. (2026).Talent acquisition practices and innovative business success of outsourcing firms in Delta State, Nigeria.*Journal of Emerging Trends in Management Sciences and Entrepreneurship*, 8(2).

Okeke, C. O., & Williams, G. (2025).Social and environmental factors of corporate sustainability and performance of plastic manufacturing firms.*International Journal of Research and Innovation in Social Science*, 9(4).

Okeke, C. O., Akpamgbo, F. O., Dike, G. N., & Williams, G. (2025).Workplace management and organizational productivity among aluminum manufacturing firms in Anambra State, Nigeria.*International Journal of Business and Management Review*, 13(1), 16–39.

Okonkwo, I., & Eze, A. (2023).System usability and artificial intelligence adoption among academic staff in Nigerian universities.*Journal of Information Technology Education*, 22(1), 77–94.

Okoye, F., & Ogbonna, C. (2022). Digital transformation and academic productivity in Federal Universities in Nigeria.*Nigerian Journal of Higher Education Management*, 8(2), 101–119.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.

Zawacki-Richter, O., Marín, V. I., Bond, M., &Gouverneur, F. (2019).Systematic review of research on artificial intelligence applications in higher education.*International Journal of Educational Technology in Higher Education*, 16(1), 1–27.