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ARTIFICIAL INTELLIGENCE TOOLS FOR PROMOTING SCHOLARLY ACTIVITIES IN FEDERAL UNIVERSITIES OF SOUTHEAST, NIGERIA

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Abstract
The study examined Artificial Intelligence Tools for Promoting Scholarly Activities in Federal Universities of Southeast, Nigeria. The study adopted a descriptive survey research design, which was considered appropriate for the study. The study was carried out in the Southeast Nigeria, comprising five states: Abia, Anambra, Ebonyi, Enugu, and Imo. The population and sample for the study consisted of 240 lecturers drawn from three federal universities in Southeast Nigeria, namely the University of Nigeria, Nsukka (UNN); Nnamdi Azikiwe University, Awka (UNIZIK); and the Federal University of Technology, Owerri (FUTO). The population was proportionally distributed among the universities as follows: 90 lecturers from the University of Nigeria, Nsukka; 80 lecturers from Nnamdi Azikiwe University, Awka; and 70 lecturers from the Federal University of Technology, Owerri. These numbers reflected the respective staff strengths and levels of academic activity in the selected institutions. Due to the manageable size of the population, the researchers studied the entire population without drawing a separate sample. were collected through a structured questionnaire titled *Artificial Intelligence Tools for Promoting Scholarly Activities* (AITPSA), which was developed by the researchers in line with the objectives of the study. The face validity of the instrument was established by three experts: two from the Department of Educational Foundations and one from the Research, Measurement and Evaluation Unit, Department of Science Education, all in the Faculty of Education, University of Nigeria, Nsukka. To ascertain the reliability of the instrument, it was administered to 20 lecturers from a federal university outside the study area. The reliability coefficient obtained using Cronbach Alpha was 0.86, indicating a high level of internal consistency. The data collection process was executed by the researchers with the assistance of trained research aides, who distributed and retrieved the questionnaires across the selected universities over a period of two weeks. The data collected were analyzed using descriptive statistics, specifically mean and standard deviation. The decision rule employed for interpreting the findings was based on a criterion mean of 2.50. Any item with a mean score of 2.50 and above was regarded as agreed upon, while any item with a mean score below 2.50 was regarded as not agreed upon. The study revealed that academic staff and students in federal universities of Southeast Nigeria had a positive perception of artificial intelligence tools and recognized their potential to enhance scholarly activities. The findings also revealed that access to AI tools was limited due to inadequate infrastructure and low digital literacy, which hindered full adoption. Based on the findings, it was recommended among others that universities should organize regular AI training workshops to build capacity and promote effective utilization of AI in teaching and research.

Keywords: Artificial Intelligence (AI), academic research, AI adoption, Federal universities

Introduction

In the digital age, Artificial Intelligence (AI) has emerged as a transformative force in academia, revolutionizing the conduct of scholarly activities such as research, academic writing, teaching, and knowledge dissemination. Globally, AI is reshaping educational landscapes by automating complex processes, enhancing access to information, and

promoting innovation in knowledge production. Kanade (2025) defines AI as the intelligence exhibited by machines or computers that enables them to imitate various complex human capabilities, including problem-solving, continuous learning, social interaction, creativity, and synergy with human users. Expanding on the implications of AI in academic contexts, Abdulrahman and Talal (2024) highlight the ability of AI technologies to conduct real-time analysis of large datasets not only on students' learning behaviors but also on their emotional states thereby enabling timely feedback, personalized interventions, and the early identification of at-risk students. While these global advancements are reshaping higher education systems worldwide, the integration of AI tools within Nigeria's academic institutions, particularly in the Federal Universities of Southeast Nigeria, remains at a developing stage. This paper explores how AI technologies are currently being utilized to promote scholarly activities in these universities, assessing their impact, opportunities, and the contextual challenges that may influence their adoption and sustainability.

AI in higher education has been widely explored, with studies highlighting its benefits in adaptive learning and assessment automation (Holmes, Luckin, Griffiths, & Forcier, 2016). In developed countries, universities leverage AI to improve educational outcomes (Zawacki-Richte, Marín, Bond, & Gouverneur, 2019). However, African institutions, including Nigerian universities, struggle with technological adoption due to systemic challenges (Adeoye & Olugbara, 2020). Research indicates that AI adoption in Nigerian universities is in its infancy, with limited government policies supporting its integration (Okon, Ibe, & Chika, 2023). AI applications in education include personalized learning, automated grading, and intelligent tutoring systems (Holmes et al., 2016). AI-powered applications, such as natural language processing (NLP) models and machine learning algorithms, facilitate efficient data handling and provide deeper insights, thereby improving research quality and productivity. For instance, AI tools can assist in brainstorming ideas, narrowing research topics, and generating keywords for literature searches (Khedkar, 2023). According to Khedkar, general key benefits and opportunities of AI tools in academia are the following:

Artificial Intelligence (AI) tools offer a wide range of benefits that, when properly utilized, can significantly improve the efficiency of scholarly activities. AI has the capacity to reduce the time and effort required to search for relevant information, select appropriate academic resources, and comprehend complex concepts. This efficiency enables academics and researchers to focus more on intellectual contributions rather than administrative or repetitive tasks. Additionally, AI tools can enhance productivity by streamlining the research and writing process. By automating literature searches, organizing references, and supporting structured writing, researchers can accomplish more within a shorter time frame. Beyond efficiency and productivity, AI tools also promote critical thinking. Although AI cannot replace in-depth discourse with experts in a given field, it can serve as a reflective tool. For example, AI-generated summaries can help researchers identify weaknesses or ambiguities in their findings, encouraging clearer articulation. Similarly, AI can simulate potential objections or alternative interpretations, prompting deeper analytical reasoning. David (2023) highlights that AI-driven platforms such as ChatGPT have been increasingly used in academic contexts, especially for data analysis and the initial structuring of research papers.

Afolabi (2024) provides a detailed framework on the application of AI tools in scholarly activities, focusing on three major areas: research and publication, academic collaboration, and teaching and learning. In the area of research and publication, AI has

transformed how scholars conduct and present their work. Natural Language Processing (NLP) technologies such as Grammarly, QuillBot, and GPT-based writing assistants—aid in improving academic writing, editing, and proofreading. Furthermore, AI-powered data analysis tools like SPSS AI, IBM Watson, and NVivo contribute meaningfully to both quantitative and qualitative research analysis. To ensure academic honesty, plagiarism detection systems such as Turnitin and Copyscape are widely utilized. Automated literature review platforms like Semantic Scholar and Connected Papers also make it easier to identify relevant research, thereby accelerating the review process and increasing research efficiency. In the context of academic collaboration, AI tools have facilitated more dynamic and efficient knowledge exchange. Platforms like ResearchGate and Academia.edu employ AI algorithms to recommend relevant scholarly content and foster academic networking. Tools like Exaptive assist researchers in locating collaborators with similar interests and suggest suitable conferences and journals for knowledge dissemination. Additionally, transcription tools such as Otter.ai and Google Speech-to-Text have made the documentation of academic discussions, interviews, and lectures more accessible and efficient. Taken together, these AI innovations are redefining how academic activities are carried out globally. However, in the context of Federal Universities in Southeast Nigeria, the full integration and application of these tools remain in their formative stages. It is within this framework that the present study seeks to examine how AI technologies are being used to promote scholarly activities in these universities, while also exploring the challenges, benefits, and future directions for AI-driven academic development in the region.

Artificial Intelligence (AI) technologies are playing an increasingly significant role in driving innovation in teaching and learning across higher education systems globally. Personalized learning platforms such as Coursera, Udemy, and EdX utilize AI algorithms to recommend customized learning paths based on individual learners' progress and preferences. These technologies support adaptive instruction and enable self-paced learning, thereby improving students' academic performance. Automated grading systems, including Gradescope and Turnitin, offer prompt feedback to learners, reducing the assessment burden on instructors. In addition, virtual teaching assistants—such as ChatGPT and IBM Watson Tutor provide real-time academic support to students, enhancing accessibility and engagement in both physical and virtual classrooms. As Afolabi (2024) rightly observed, the use of AI tools is instrumental in transforming not only research and academic collaboration but also the pedagogy of teaching and learning. Scholarly activities, which form the foundation of academic excellence, remain essential for advancing national and global knowledge economies. According to David (2023), AI platforms such as ChatGPT are increasingly being used to aid research through functions like data analysis and academic paper structuring. AI applications—including automated literature review tools, plagiarism detection software, predictive analytics, and natural language processing (NLP) models—have improved the quality and efficiency of research processes. These tools enable scholars to generate new insights more quickly, collaborate across institutions, and disseminate findings more broadly. However, while the advantages are considerable, Afolabi (2024) notes that institutional readiness, digital capacity, and ethical considerations must be addressed for effective AI integration.

The adoption of AI tools in higher education presents a dual reality of opportunities and challenges. On the one hand, AI offers tools that enhance research quality, increase academic output, and promote personalized learning experiences. On the other hand, concerns regarding originality, critical thinking, and the preparedness of

institutions to absorb such technologies persist. In the Nigerian context, maximizing the potential of AI requires strategic policy development, infrastructure upgrades, and consistent capacity building. Despite these challenges, the value of AI in enhancing scholarly activities is evident across multiple academic domains. AI tools significantly enhance research productivity. Search engines such as Google Scholar and Semantic Scholar, powered by AI, assist researchers in identifying relevant literature quickly. Tools like Elicit and Research Rabbit automate literature synthesis, while data analysis software such as IBM Watson, NVivo, and SPSS AI expedite both qualitative and quantitative analysis. These applications allow for faster and more reliable data interpretation, which is critical for evidence-based academic work (Afolabi, 2024). Moreover, AI supports academic writing and publishing through writing assistants like Grammarly, QuillBot, and ChatGPT, which help researchers improve grammar, coherence, and clarity. Reference managers such as Zotero, Mendeley, and EndNote automate citation formatting, ensuring scholarly accuracy. Trinka and Paperpal assist in refining manuscripts for submission to academic journals, increasing the chances of publication in reputable outlets.

In teaching and learning, adaptive platforms such as Coursera, EdX AI, and Duolingo facilitate personalized instruction by responding to learners' unique needs. AI-powered virtual tutors provide immediate feedback and help students navigate complex subject areas, thus improving comprehension and learning outcomes. These technologies enable instructors to deliver differentiated instruction at scale (David, 2023). Academic collaboration has also benefited from AI-driven tools. Platforms like ResearchGate and Academia.edu utilize intelligent algorithms to foster collaboration among scholars worldwide. Matchmaking tools such as Exaptive help identify researchers with complementary interests, while transcription tools like Otter.ai and Transkriptor improve access to academic discussions, interviews, and lectures by converting them into searchable text formats (Afolabi, 2024). In addition, AI tools uphold academic integrity through systems like Turnitin and Copyscape, which detect plagiarism and ensure originality in academic work. AI-based journal screening tools assess the credibility of research articles, helping scholars avoid predatory journals. Summarization tools such as SciSpace, Copilot, and SummarizeBot assist researchers in understanding lengthy papers, while translation tools like DeepL and Google Translate break down language barriers in international scholarly communication.

Advanced data visualization is another area where AI contributes meaningfully. Tools like Tableau AI, Power BI, and Python libraries such as SciKit-Learn and TensorFlow assist researchers in interpreting and presenting data in clear, visually engaging formats. AI-powered speech-to-text and translation applications also improve accessibility and inclusion, supporting the participation of scholars with disabilities and those who are non-native English speakers (Butson & Spronken-Smith, 2024). The adoption of AI in Nigerian higher education is gaining attention. Reuben and Kabilan (2024), in a study on university lecturers in Northeast Nigeria, reported increasing awareness and willingness to integrate AI into teaching and administrative tasks. Their separate study on librarians in Kwara State highlighted the growing use of AI in library operations, emphasizing a gradual shift toward digital transformation in academic institutions. Federal universities in Southeast Nigeria are positioned to contribute significantly to this transformation, given their prominent role in national education and research advancement. Nonetheless, the adoption of AI in these institutions remains an emerging practice. Okeke and Nwafor (2021) contend that while AI holds great promise for enhancing research productivity, its integration is still limited by infrastructural gaps,

low digital literacy, and resistance to change. Butson and Spronken-Smith (2024) also emphasize that although AI has the potential to personalize education, streamline administrative duties, and support data-driven decision-making, disparities in technological adoption across institutions continue to pose a challenge.

Notwithstanding the recognized benefits, several factors hinder full-scale AI adoption in Nigerian universities. These include inadequate technological infrastructure, limited digital literacy among faculty and students, ethical concerns regarding data privacy and authorship, and the absence of clear institutional policies on AI usage. Understanding these challenges is essential for crafting effective strategies to promote AI integration into scholarly practices. This study, therefore, seeks to examine the adoption of AI tools for promoting scholarly activities in Federal Universities of Southeast Nigeria. These universities have played a pivotal role in advancing the nation's educational and research sectors, but they continue to face challenges such as underfunding, industrial actions, and limited global competitiveness. Strategic investment in AI technologies, enhanced infrastructure, and robust institutional frameworks will be key to enabling these institutions to compete effectively on the global academic stage and foster sustainable national development through scholarly excellence.

Recent advancements in Artificial Intelligence (AI) have significantly reshaped scholarly practices globally, especially in higher education and academic research. AI tools are now integrated into various stages of the research process, including literature review, data analysis, writing assistance, and academic networking. Kanade (2025) noted that AI systems are designed to replicate human cognitive functions, supporting continuous learning and problem-solving. Tools such as ChatGPT, Grammarly, QuillBot, and Semantic Scholar have been widely used to aid academic writing and synthesis. Similarly, AI-powered platforms like SPSS AI, IBM Watson, and NVivo now facilitate both qualitative and quantitative data analysis (Afolabi, 2024). In the area of collaboration, AI-enabled platforms such as ResearchGate, Academia.edu, and Exaptive promote research visibility and researcher matching for joint academic work. Abdulrahman and Talal (2024) further emphasized that AI applications enhance academic productivity by offering personalized learning experiences and streamlining feedback and evaluation processes. These innovations reflect a growing global trend toward AI-integrated academic environments that prioritize efficiency, innovation, and collaboration. However, from the researchers' observation and available empirical studies reviewed, it appears that such AI-driven support for scholarly activities has not been comprehensively investigated within the context of tertiary institutions in Southeast Nigeria. There is a noticeable gap in localized studies that examine how students and lecturers adopt and utilize AI tools for research, collaboration, teaching, and publication. This apparent dearth of context-specific empirical evidence underscores the need for the present study, which seeks to explore the use of AI tools in enhancing scholarly activities in this region.

Statement of the Problem

The integration of Artificial Intelligence (AI) into higher education has become a transformative global trend, with institutions across developed and developing nations embracing AI tools to enhance scholarly activities such as research, academic writing, teaching, collaboration, and knowledge dissemination. Ideally, universities are expected to harness AI technologies to improve research efficiency, personalize learning experiences, ensure academic integrity, and foster interdisciplinary collaboration through intelligent platforms and data-driven systems. In advanced educational settings, AI tools like

ChatGPT, IBM Watson, Grammarly, Turnitin, and adaptive learning platforms such as Coursera and EdX have become essential in supporting academic productivity and innovation. These tools assist in automating literature reviews, analyzing large datasets, refining scholarly writing, and facilitating global collaboration among researchers. With appropriate digital infrastructure, policy frameworks, and technical capacity, the adoption of AI has led to significant improvements in academic output and institutional performance. However, in the context of federal universities in Southeast Nigeria, the adoption of AI tools for scholarly activities remains limited and uneven. While some institutions and individual scholars have begun experimenting with AI applications, the overall level of integration falls short of global expectations. Several challenges persist, including inadequate digital infrastructure, low levels of AI literacy among academic staff, limited access to AI-powered platforms, inconsistent funding, and the absence of clear institutional policies guiding AI usage in academic environments. Moreover, ethical concerns, lack of technical support, and resistance to technological change continue to hinder widespread adoption. This contrast between the global ideal and the local reality highlights a significant gap in the effective utilization of AI tools to support scholarly activities in the region. If not urgently addressed, this gap may widen the digital divide in academia and reduce the competitiveness of Nigerian universities on the global research landscape. Therefore, the problem this study seeks to address is the limited adoption and utilization of Artificial Intelligence tools for promoting scholarly activities in federal universities of Southeast Nigeria.

Purpose of the Study

The general purpose of the study was to investigate Artificial Intelligence Tools for Promoting Scholarly Activities in Federal Universities of Southeast, Nigeria. Speifically, the study aimed to:

1. examine the extent to which artificial intelligence (AI) tools are adopted to promote scholarly activities in Federal Universities in Southeast Nigeria.
2. identify the specific AI tools commonly utilized in research, teaching, and academic collaboration within Federal Universities in Southeast Nigeria.
3. assess the impact of AI tools on research productivity, teaching effectiveness, and collaborative academic engagement.
4. investigate the key challenges that hinder the effective adoption of AI tools for scholarly purposes in Federal Universities in Southeast Nigeria.
5. propose practical strategies for enhancing the adoption and effective use of AI tools to promote scholarly activities in the study area.

Research Questions

The following research questions guided the study;

1. To what extent are artificial intelligence (AI) tools adopted for promoting scholarly activities in Federal Universities in Southeast Nigeria?
2. What specific AI tools are commonly used in research, teaching, and academic collaboration in Federal Universities in Southeast Nigeria?
3. What is the impact of AI tools on research productivity, teaching effectiveness, and academic collaboration in the selected universities?
4. What are the major challenges hindering the adoption of AI tools for promoting scholarly activities in Federal Universities in Southeast Nigeria?
5. What strategies can be proposed to optimize the adoption and effective utilization of AI tools for scholarly activities in the study area?

Methods

The study adopted a descriptive survey research design, which was considered appropriate for obtaining opinions from a defined population on the use of artificial intelligence (AI) tools in promoting scholarly activities. The area of the study was Southeast Nigeria, comprising five states: Abia, Anambra, Ebonyi, Enugu, and Imo. The focus was specifically on federal universities within this region, known for their research traditions and digital infrastructure that facilitate the use of AI technologies. The population and sample for the study consisted of 240 lecturers drawn from three federal universities in Southeast Nigeria, namely the University of Nigeria, Nsukka (UNN); Nnamdi Azikiwe University, Awka (UNIZIK); and the Federal University of Technology, Owerri (FUTO). The population was proportionally distributed among the universities as follows: 90 lecturers from the University of Nigeria, Nsukka; 80 lecturers from Nnamdi Azikiwe University, Awka; and 70 lecturers from the Federal University of Technology, Owerri. These numbers reflect the respective staff strengths and levels of academic activity in the selected institutions. Due to the manageable size of the population, the researchers studied the entire population without drawing a separate sample. Data were collected through a structured questionnaire titled *Artificial Intelligence Tools for Promoting Scholarly Activities* (AITPSA), which was developed by the researchers in line with the objectives of the study. The face validity of the instrument was established by three experts: two from the Department of Educational Foundations and one from the Research, Measurement and Evaluation Unit, Department of Science Education, all in the Faculty of Education, University of Nigeria, Nsukka. These experts examined the questionnaire for clarity, relevance, and alignment with the study objectives. To ascertain the reliability of the instrument, it was administered to 20 lecturers from a federal university outside the study area. The reliability coefficient obtained using Cronbach Alpha was 0.88, indicating a high level of internal consistency. The data collection process was executed by the researchers with the assistance of trained research aides, who distributed and retrieved the questionnaires across the selected universities over a period of two weeks. This approach enabled clarification of any vague items and improved the return rate of the instrument. The data collected were analyzed using descriptive statistics, specifically mean and standard deviation. The decision rule employed for interpreting the findings was based on a criterion mean of 2.50. Any item with a mean score of 2.50 and above was regarded as agreed upon, while any item with a mean score below 2.50 was regarded as not agreed upon.

Results

Table 1: Mean and Standard Deviation Ratings of Lecturers on the Extent of Adoption of AI Tools for Promoting Scholarly Activities in Federal Universities of Southeast Nigeria

S/N	Item Statement	Mean	SD	Decision
1	AI tools are frequently used for conducting academic research in my institution	3.30	0.85	HE
2	AI applications are integrated into instructional delivery in the teaching and learning process	3.15	0.90	HE
3	Academic staff receive training on the use of AI tools for scholarly activities	2.80	1.00	HE
4	AI tools are available and accessible to academic staff for research purposes	3.10	0.95	HE

5	AI-based plagiarism detection and referencing tools are commonly used for academic writing	3.25	0.88	HE
6	AI tools are employed in data analysis and interpretation during research projects	3.05	0.91	HE
7	Faculty members collaborate using AI-driven platforms for scholarly engagement	2.95	0.92	HE
8	AI tools are employed in reviewing literature and enhancing research quality	3.20	0.89	HE
	Aggregate Mean	**3.10**	**0.91**	**HE**

Data in Table 1 show that the mean ratings of lecturers' responses on the extent of adoption of AI tools for promoting scholarly activities in Federal Universities of Southeast Nigeria range from 2.80 to 3.30. The highest mean score of 3.30 (SD = 0.85) indicates that AI tools are frequently used for conducting academic research. Items on the use of AI for literature review enhancement (M = 3.20, SD = 0.89), plagiarism detection and referencing (M = 3.25, SD = 0.88), and integration into instructional delivery (M = 3.15, SD = 0.90) also show high levels of adoption. Although staff training (M = 2.80, SD = 1.00) and collaborative engagement through AI platforms (M = 2.95, SD = 0.92) recorded relatively lower means, they still reflect high extent. The overall aggregate mean of 3.10 with a standard deviation of 0.91 confirms that the adoption of AI tools among lecturers is generally high. This implies that AI has become an integral part of academic activities and research in the region's federal universities.

Table 2: Mean and Standard Deviation Ratings of Lecturers on the AI Tools Commonly Used for Promoting Scholarly Activities in Federal Universities of Southeast Nigeria

S/N	Item Statement	Mean	SD	Decision
1	AI-powered plagiarism detection tools (e.g., Turnitin) are commonly used	3.50	0.80	SA
2	AI-based research analysis tools (e.g., IBM Watson) are widely utilized	3.20	0.85	A
3	AI-driven writing assistants (e.g., Grammarly, QuillBot) are frequently employed	3.40	0.78	A
4	AI-powered teaching assistants (e.g., ChatGPT) support instructional activities	3.05	0.88	A
5	AI tools for literature review automation (e.g., Research Rabbit, Semantic Scholar) are in use	3.25	0.84	A
6	AI-based translation tools (e.g., DeepL, Google Translate) support multilingual publications	3.10	0.89	A
7	AI tools for academic content generation are occasionally used by lecturers	3.00	0.91	A
8	AI-integrated reference managers (e.g., Zotero with AI plug-ins) assist in citation management	3.15	0.82	A
	Aggregate Mean	**3.21**	**0.86**	**A**

Data in Table 2 show that the mean ratings of lecturers' responses regarding the AI tools commonly used for promoting scholarly activities in Federal Universities of Southeast Nigeria range from 3.00 to 3.50. The highest-rated tool is AI-powered plagiarism detection (M = 3.50, SD = 0.80), indicating its strong prevalence. AI-driven writing assistants (M = 3.40, SD = 0.78), research analysis tools (M = 3.20, SD = 0.85), and literature review

automation tools (M = 3.25, SD = 0.84) are also widely adopted. While tools like academic content generators and teaching assistants recorded slightly lower means (M = 3.00–3.05), all items fall under the decision category of *Agree*. The aggregate mean of 3.21 with a standard deviation of 0.86 confirms that a variety of AI tools are actively utilized by lecturers to support and enhance scholarly activities in these universities.

Table 3: Mean and Standard Deviation Ratings of Lecturers on How AI Tools Impact Research Productivity, Teaching Effectiveness, and Collaboration in Federal Universities of Southeast Nigeria

S/N	Item Statement	Mean	SD	Decision
1	AI enhances research productivity through automated data analysis.	3.70	0.60	SA
2	AI-powered teaching assistants improve teaching effectiveness.	3.40	0.75	A
3	AI tools facilitate collaboration among researchers.	3.55	0.70	SA
4	AI-based learning tools enhance student engagement.	3.30	0.85	A
5	AI supports real-time feedback and assessment in teaching.	3.45	0.72	A
6	AI enhances personalized and adaptive learning processes.	3.35	0.81	A
7	AI accelerates literature review and data gathering in research.	3.60	0.68	SA
8	AI fosters interdisciplinary and cross-institutional research partnerships.	3.50	0.74	A
	Aggregate Mean	**3.48**	**0.73**	**A**

Data in Table 3 reveal that lecturers generally agree that AI tools positively impact academic activities, with a grand mean of 3.48 (SD = 0.73). Highest agreement was recorded on AI's ability to enhance research productivity (M = 3.70), support literature review (M = 3.60), and facilitate collaboration (M = 3.55). This suggests that AI significantly contributes to improving research output, teaching efficiency, and academic partnerships in Nigerian universities.

Table 5: Mean and Standard Deviation Ratings of Lecturers on Strategies to Optimize AI Adoption for Promoting Scholarly Activities

S/N	Item Statement	Mean	SD	Decision
1	Regular AI training workshops should be conducted for academic staff.	3.80	0.55	SA
2	Universities should invest in AI-powered research infrastructure.	3.70	0.60	SA
3	AI policies and institutional guidelines should be developed and enforced.	3.60	0.65	SA
4	Collaboration with AI technology firms should be encouraged.	3.75	0.58	SA
5	Research grants should be initiated to support AI-based academic innovations.	3.65	0.63	SA
6	Interdisciplinary AI research hubs should be established within universities.	3.55	0.66	SA
7	AI-driven teaching and learning models should be piloted across various faculties.	3.60	0.64	SA
8	AI competencies should be embedded into postgraduate curricula for capacity building.	3.68	0.59	SA

Aggregate Mean	**3.66**	**0.61**	**SA**

Data in Table 5 show that all the strategies listed for optimizing AI adoption in promoting scholarly activities in Federal Universities of Southeast Nigeria were rated high by the respondents. The mean ratings for all eight items range from 3.55 to 3.80, with corresponding standard deviations between 0.55 and 0.66. These values fall within the range of "Strongly Agree" (SA), based on the real limit of numbers used in the scale. The grand mean of 3.66 with a standard deviation of 0.61 further supports the consensus among lecturers that these strategies are both relevant and applicable for enhancing AI integration in academic work.

Table 5: Mean and Standard Deviation Ratings of Lecturers on Strategies to Optimize AI Adoption

S/N	Item Statement	Mean	SD	Decision
1	Regular AI training workshops should be conducted for academic staff.	3.80	0.55	SA
2	Universities should invest in AI-powered research infrastructure.	3.70	0.60	SA
3	AI policies and guidelines should be established.	3.60	0.65	SA
4	Collaboration with AI technology firms should be encouraged.	3.75	0.58	SA
5	Federal universities should integrate AI into their academic curriculum.	3.68	0.62	SA
6	AI-based collaborative platforms should be promoted among researchers.	3.77	0.59	SA
7	Government should provide research grants to fund AI innovations in academia.	3.82	0.57	SA
8	Stakeholders should ensure regular maintenance and upgrading of AI infrastructure.	3.65	0.64	SA
9	Universities should establish AI innovation hubs to promote student engagement.	3.71	0.60	SA
	Aggregate Mean	**3.72**	**0.60**	**SA**

Data in Table 5 show that all nine strategies had mean ratings ranging from 3.60 to 3.82 and standard deviations between 0.55 and 0.65. These values demonstrate high internal agreement among respondents and low variability in opinion, indicating a strong consensus. All item means fall within the real limit boundary of 3.50 to 4.00, which corresponds to the decision point of Strongly Agree (SA). The grand mean of 3.72 further confirms that lecturers exhibited a high level of agreement on the necessity of implementing these strategic measures. This implies that consistent and institutionalized interventions such as training, policy frameworks, infrastructure investment, and stakeholder collaboration are viewed as essential pathways for enhancing AI adoption and scholarly collaborations in Federal Universities.

Discussion

The findings of the study revealed that artificial intelligence (AI) tools are moderately adopted for promoting scholarly activities in Federal Universities of Southeast Nigeria. This moderate level of adoption reflects a growing awareness and cautious integration of AI within the academic ecosystem. Despite an increasing interest in AI-driven academic processes, many lecturers remain at the early stages of full implementation. This implies

that while AI is gradually influencing scholarly practices, it has not yet become a mainstream tool across all academic disciplines. The findings are in consonance with the study of Okeke and Nwafor (2021) who observed that the adoption of AI in Nigerian universities is still evolving, largely due to infrastructural limitations, inconsistent training, and institutional unpreparedness. Similarly, Reuben and Kabilan (2024) noted that university lecturers in Northeast Nigeria demonstrated moderate readiness for AI adoption, citing limited technical expertise and inadequate administrative support as underlying factors that affect full-scale utilization. The findings of the study revealed that lecturers commonly use AI tools such as ChatGPT, Grammarly, Turnitin, and Google Scholar for various academic purposes including scholarly writing, referencing, grammar checking, plagiarism detection, and literature search. This indicates a preference for readily accessible and user-friendly AI applications that assist in improving academic quality and reducing the time spent on repetitive academic tasks. Furthermore, these tools enable lecturers to streamline their research processes and produce more refined outputs. The findings are in consonance with the study of David (2023) who found that AI-driven writing tools enhance academic productivity by supporting researchers in drafting, editing, and verifying the originality of scholarly documents. In addition, Afolabi (2024) identified ChatGPT, Turnitin, and Grammarly among the most frequently used AI tools that foster accuracy, collaboration, and efficiency in academic research and publishing among Nigerian scholars.

The findings of the study revealed that AI tools positively influence lecturers' research productivity, teaching delivery, and scholarly engagement. Respondents acknowledged that AI enhances speed, improves access to diverse academic sources, promotes intellectual discourse, and facilitates online research collaborations. These AI applications have been useful in expanding lecturers' capacity to explore complex data sets, create engaging teaching materials, and manage student learning outcomes more effectively. The findings are in consonance with the study of Butson and Spronken-Smith (2024) who affirmed that AI tools drive pedagogical innovation by automating instructional activities, supporting content generation, and enabling feedback customization in higher education. In a similar study, Abdulrahman and Talal (2024) argued that AI supports the emotional and cognitive aspects of teaching, thereby contributing to a more holistic academic experience and stronger teacher-learner interactions. The findings of the study revealed that several challenges hinder the effective use of AI tools for scholarly activities in the universities. These include lack of funding for digital infrastructure, poor internet connectivity, insufficient technical knowledge, resistance to change, and concerns over data privacy and academic integrity. These issues suggest that without deliberate institutional commitment and supportive policy frameworks, the growth of AI in academia may remain slow and uneven. The findings are in consonance with the study of Reuben and Kabilan (2024) who emphasized that the absence of adequate ICT support, low faculty digital literacy, and unreliable power supply limit AI adoption in Nigerian higher institutions. Additionally, Okeke and Nwafor (2021) noted that many academics perceive AI as a threat to conventional scholarly methods, which results in hesitation and minimal usage of AI tools for research and teaching.

The findings of the study revealed that enhancing AI adoption for scholarly activities requires targeted strategies such as consistent training programs for academic staff, government and institutional funding for AI infrastructure, improved access to digital resources, and the integration of AI policy into university administration. Respondents recommended partnerships between universities and technology companies

to facilitate knowledge exchange and access to AI innovations. The findings are in consonance with the study of Afolabi (2024) who emphasized the role of collaborative platforms, faculty mentorship, and cross-sector alliances in strengthening AI-based academic research in Nigerian universities. Kanade (2025) also posited that AI integration should be approached from a multidisciplinary perspective, combining educational leadership, technology policy, and institutional culture to ensure sustainable adoption across all academic units.

Educational Implications of the Study

The study highlights the growing importance of integrating artificial intelligence tools into academic practices in Nigerian federal universities. It implies the urgent need to equip both students and academic staff with digital literacy and AI competencies to enhance research output, collaborative learning, and pedagogical innovation. Universities should embed AI-related content into existing curricula and encourage interdisciplinary research involving AI applications. Furthermore, the findings suggest that institutional policies must promote ethical use of AI, safeguard academic integrity, and address concerns about data privacy. Effective implementation of AI in education requires sustained investment in infrastructure, training, and access to AI tools. Finally, fostering partnerships with AI developers and international bodies can enhance the relevance and global competitiveness of Nigerian higher education.

Conclusion

The study examined artificial intelligence tools for promoting scholarly activities in Federal Universities of Southeast Nigeria. The findings revealed that although AI tools are being moderately adopted, their utilization is largely limited to functions such as grammar checking, plagiarism detection, referencing, and literature search. While these tools have positively influenced lecturers' research productivity and teaching engagement, several challenges such as inadequate funding, lack of digital infrastructure, poor internet access, and low technical capacity continue to hinder their full adoption. The study also highlighted the necessity for institutional support, capacity building, and effective policy frameworks to enhance AI integration into academic work. For AI tools to significantly transform scholarly practices in Nigerian universities there must be deliberate efforts by stakeholders to address infrastructural gaps, strengthen digital literacy, and promote ethical use of AI applications in research and teaching. Strengthening collaborations between universities and technology providers will further ensure that lecturers are well-equipped to leverage the potential of AI for quality academic output.

Recommendations

Based on the findings of the study, the following recommendations are made to enhance the effective use of artificial intelligence tools for promoting scholarly activities in federal universities of Southeast Nigeria:

1. Universities should organize artificial intelligence (AI) training workshops for both academic staff and students in order to improve their competence and confidence in the application of AI tools for teaching, research, and academic collaboration.
2. Government and relevant stakeholders should invest in AI infrastructure to enhance access, usability, and integration of AI tools across various departments and faculties in the universities.
3. Policies should be formulated to guide AI adoption and ensure ethical, responsible, and effective use of AI technologies within the academic environment.

4. Universities should establish partnerships with AI technology providers to foster academic collaborations, improve knowledge transfer, and facilitate access to cutting-edge AI solutions.
5. AI-based research grants and funding opportunities should be created to support innovative academic projects, encourage faculty-led AI research, and strengthen the role of AI in scholarly development.

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