

Use of Artificial Intelligence for Research and Academic Writing among Academic Staff in Nasarawa State University and University of Abuja

ASUQUO, Raymond Udosen & Tsegysu Santas

Research Fellows, Department of Mass Communication,
Faculty of Social Sciences, Nasarawa State University, Keffi, Nigeria
asuquoraymondudosen@nsuk.edu.ng; tsegysu@nsuk.edu.ng

Abstract

The application of new technologies such as Artificial Intelligence in academic research is a growing phenomenon across the globe. This has attracted the attention of researchers with a view to understanding the knowledge and capacity of AI usage in research, the degree of use, purposes and challenges. Therefore, the focus of this study is to assess the use of Artificial Intelligence (AI) for research and academic writing among academic staff of Nasarawa State University and the University of Abuja, Nigeria. The objectives of the study are to find out the extent, purposes and challenges of the application of AI in academic writing and research. Using the Technology Acceptance Model as its theoretical framework, the study adopted the survey design to collect data from 300 respondents through the use of questionnaire administered to staff of the two institutions. The result showed that the academics use AI to promote the development of ideas and the structuring of research methodologies, reviewing the volume of literature and synthesising them, as well as ease of data collection, sorting and analysis. Further findings also showed among others that AI is useful in terms of coding and analysis of qualitative data, checking Grammarly and spelling, editing and management of data. AI is important to academic writing and research because it provides academic writers the avenue to break down sentences, understand context, create plausible text, predict how the writer can construct and structure sentences, process large amounts of information, and assists to achieve coherence. The study concluded that though AI has significantly impacted academic research and writing, its utilisation is still at a moderate level and it is challenged by ethical issues. The researchers recommended among others that universities, polytechnics and other higher institutions of learning in Nigeria should come up with guidelines that will lead to ethical use of AI for academic writing and research.

Keywords: Artificial intelligence, research, academic writing, Technology Acceptance Model

Introduction

The emergence of Artificial Intelligence (AI) has altered almost every aspect of human lives; AI has proven to be significant in individuals and organisational activities due to the fact that it increases outputs (Demetriou, 2024). Marikyan and Papagiannidis (2023) contend that acceptance of innovative communication platforms like AI comes with instant, long, and short terms benefits both to individuals and organisations who have adopted the technology. The purpose of doing such is because they believe that it will lead to increase in production within

the shortest possible time with minimal cost and efforts.

Effort towards the AI technology, according to Robison (2018) began with thinking by classical philosophers who attempted to give details and illustrate how human thoughts can be imitated by machines. However, in 1956, AI as machine capable of doing what humans can do was developed by John McCarthy (McGuire, 2006). From that time, AI developers across the world continued to fine-tune it and integrate it into different disciplines to assist humans in carrying out their activities more successfully and efficiently with less physical energy.

In the academic field, researches have shown that scholars the world-over have adopted and incorporated AI application in conducting studies and other aspects of their discipline (Utami et al, 2023; Abdalkader, 2022; Nakazawa, Udagawa & Akabayashi, 2022; Nazari, Shabbir & Setiawan, 2021; Efebeh, Orishede & Igoh, 2024; Idris & Umar, 2024). AI technology is useful to academics in areas such as the generation of research ideas and topics, review of literature, ease in data gathering, sorting and analysis, sentence and paragraph structuring, among others. AI technology, according to Aljuaid (2024) assists researchers in rephrasing, rewording, enhancing syntax and grammar, overcoming thinking challenges, and improving their research and writing. Chen *et al.* (2020a) further aver that various AI platforms, such as Quilbot, ChatGPT, to mention but a few, help with data assessment, analysis of literature, and composition of sentences while writing.

A survey by the Yondu Team (2024) indicates that in the Philippines, 79.2% of scholars and post-graduate students use AI for various academic purposes. Another data by Digital Education Council, a global alliance of universities, reveals that in 16 countries, 86% of academics applied AI to search for information, check grammar, summarise documents, paraphrase, and to create first drafts (Kelly, 2024).

Furthermore, available information shows that in nations such as North Korea, Singapore, Canada, Germany, Ethiopia, Ukraine, Sweden, New Zealand, Japan, Ghana, Cameroun among others, AI is being utilised by academics to enhance teaching, research and other academic activities (Yonhap, 2025; Kadence International, 2025).

Studies have equally demonstrated that academics in Nigeria have also incorporated AI in research and other academic writing (Uno et al, 2024; Efebeh, Orishede & Igoh, 2024; Idris, & Umar, 2024). Nevertheless, researchers in Nigerian higher institutions of learning must cautiously think about the ethical implications of using AI in conducting studies and other academic engagements and create clear rules for its application. Therefore, the crux of this study is to investigate the use of AI for research and academic writing among academic staff in Nasarawa State University, Keffi and the University of Abuja, Nigeria.

Statement of the Problem

The application of new technologies such as AI in academic research is a growing phenomenon across the globe. This has attracted the attention of researchers with a view to understanding the knowledge and capacity of AI usage in research, the degree of use, purposes and challenges (Akkureddy, 2024; Idris & Umar, 2024; Uno et al, 2024; Efebeh, Orishede & Igoh, 2024; Alshater, 2022; Chatterjee & Bhattacharjee, 2020). For instance, the study by Akkureddy (2024) focused on the importance of generative AI in academic writing. That of Idris and Umar (2024) dwelled on the use of artificial intelligence platforms for academic research by lecturers in universities in Katsina state, Nigeria. The study by Uno et al (2024) concentrated on potential and threats of the application of artificial intelligence in academic writing.

Furthermore, Efebeh, Orishede and Igoh (2024) research was on artificial intelligence and academic research in Delta State University, Nigeria. That of Alshater (2022) was on exploring the impact of ChatGPT on enhancing academic performance. While the crux of Chatterjee and Bhattacharjee's (2020) investigation was on the adoption of artificial intelligence in higher education. However, there is still dearth of data about the degree, benefits and challenges of the use of AI on academic research in Nasarawa State University and University of Abuja. Therefore, the gap in knowledge that this study filled is by investigating the use of artificial intelligence (AI) for research and academic writing among academic staff in Nasarawa State University, Keffi and University, Abuja, Nigeria.

Objectives of the Study

The broad objective of the study is to assess the use of artificial intelligence (AI) for research and academic writing among academic staff in Nasarawa State University, Keffi and University of Abuja, Nigeria. The specific objectives include to:

1. Examine the purpose of the use of AI in academic research and writing.
2. Find out the challenges associated with the use of AI in academic writing and research.

Review of Literature

The Benefits and Challenges of Artificial Intelligence in Academic Writing and Research

One of the beneficiaries of AI is the academic sector. Dida, Chakravarthy and Rabbi (2023) state that AI has been instrumental to academic writing as it assists writers to come up with writing ideas, structure their content, conduct literature review, edit and manage data. It is useful in dealing with complex and volume of information; AI becomes significant in helping to summarise and management difficult ideas, improve and boost your efficiency in research (Akkureddy, 2024). This implies that AI is important to academic writing and research because it provides academic writers the avenue to breakdown sentences, understand context, create plausible text, predicting how the writer can construct and structure sentences, processes large amount of information and assists to achieve coherence. Conde et al (2024) contend that the application of AI in academic research and writing marks a major change as AI is playing key role in collecting research data and analysing the data. AI is used by academic writers to translate, summarise large documents, paraphrase, get research topics, write abstract, analyse data and to suggest and write research methodology (Lee & Choi, 2023). Li (2023) concur that various AI platforms such as Grammarly and Paperpal improve the quality of academic writing by enhancing the grammar and spelling. AI offers real-time feedback, reorganisation of work schedules and automating academic writing and research activities (Chatterjee et al, 2020).

Furthermore, AI communication technology also comes with some challenges. Wilson et al (2017) state that the issue with AI uses in some organisations in the United State of America was the readiness and technical know-how of the workers to understand and apply this new communication tool. Weatley (2021) cited in Idris and Umar (2024) identify insufficient knowledge among researcher in the use and application of AI as one of the challenges. Demetriou (2024) further identifies the setbacks with the application of AI in academic writing and research to include concerns around plagiarism and quality, possible content reduction from algorithms, decrease in creativity and human scrutiny is still very important.

Scholars and organisations across the world have also conducted studies on the impact and issues associated with the use of AI by academic writers. Thus, this aspect of the investigation reviews some of these studies. To begin with, Khaifa and Albadawy (2024) conducted a review on the benefits of AI in academic research and writing. The study established that AI is useful in terms of research idea generation, review of literature, analysis of data, helpful in editing and structuring of content and writing of the research design. It was concluded that AI has greatly improved academic writing. The study, therefore advocated for knowledge update of academic writers to be able to utilise AI effectively, wider and ethical use of AI in research.

Similarly, Malik et al (2023) explored higher institutions students' perspective regarding the use of AI for easy writing. The study adopted the case study research approach and obtained data from 245 respondents across 25 higher educational facilities in Eastern and Central Indonesia. The research found that AI had positive impact on the essay writing of the students. The impactful areas include assisting in checking of grammar, detect plagiarised content, translation and outlining of essay ideas. The study also established issues related with the use of AI for academic writing to include diminishing of creativity and critical thinking. It was thus concluded that despite some challenges, AI has established itself as strong tool for enhancing students writing skills. The study consequently recommended a balanced use of AI for academic purposes.

In the same vein, Alshater (2022) investigated the importance of AI in improving academic of performance. The study superficially focused on ChatGPT. The case study research design was adopted. Finding of the study indicated that ChatGPT was helping researchers in data evaluation, interpretation, review of documents, situation generation and to communicate the

outcomes of their studies with others. The result of the investigation also revealed the limitations of the use of AI in academic-related works to include data quality, insufficient knowledge in the use of various AI tools, and AI is negatively affecting human critical thinking in solving academic problems. The study therefore suggested the need for careful use of ChatGPT bearing its limitations in line with human analysis and elucidation.

Also, Idris and Umar (2024) examined the use of AI for academic purposes by lecturers in universities in Katsina State, Nigeria. The study utilized the survey research method. Finding showed that the respondents made use of AI platforms such as ChatGPT, Rytr, Quilbot, ChatPDF, Research Rabbit, Grammarly, Semantic Scholar and Elicit AI. Data further indicated that the participants used AI to retrieve information, manage citations and prevention of plagiarism. It was concluded that AI has become imperative in academic activities in spite of its challenges one of which is reduction in creative thinking. The study suggested that academics should continue to explore the various AI tools for better research and writing, but that should be done under ethical considerations.

Furthermore, Efebeh, Orishede and Igoh (2024) assessed the adoption and application of AI for research activities. The study collected data through the survey research strategy from lecturers in Faculty of Social Sciences, Delta State University. The study found that AI has positive impact on research among the respondents. AI was found useful in data collection, sorting and analysis, review of literature and reducing the time that was previously used to achieve academic writing tasks. The finding of the study underscores the impactful role of AI among Nigerian academic researchers. It thus recommended that Nigerian higher institutions of learning should come up with guidelines for the application of AI in research due to some of the ethical issues associated with AI use in academic writing and research.

In the same way, Uno et al (2024) did a review on understanding the potential and threats of AI in academic investigation. The result of the study established that AI use in academic works was due to its ability to analyse large data within a short time, reduce plagiarism content and enhance review of literature. The study finding further revealed that AI was creating academic laziness, affecting critical thinking and creativity. Conclusion drawn was that despite the importance of AI in the academic field, unethical application of this technology by some academics continues to raise concern. The study recommended that developers of the AI technology need to come up with AI tools that will differ from AI-powered studies and researches conducted through the application of human brain.

Theoretical Underpinning

The study is situated within the framework of the Technology Acceptance Model (TAM) proposed by Davis in 1989. The thrust of the Model is to explain how communication technologies are accepted by people (Darikyan & Papagiannidis, 2023). TAM states that the reception of technology is based on the intention and behaviour of those who use such a technology. The acceptance of such technology by the individuals, according to Darikyan and Papagiannidis (2023), is predicated on how important the technology is seen to carry out a particular task and how easy it is to apply the technology.

The ability of the Artificial Intelligence communication technology to enhance the process of conducting academic studies, in addition to its capacity to analyse and handle large volume of information within a short time, may impact perceived usefulness (PU) of this technology in academic writing and investigation (Al-Mamary & Shamsuddin, 2015 cited in Efebeh & Igoh, 2024).

Thus, the use of AI has significantly changed the way academic researchers conduct their studies on daily basis. The AI technology has brought about speed. Therefore, in a study of this kind, the TAM becomes important in the sense that AI as a technological communication initiative is either impacting positively or negatively on the academic research. Also, this study adopted the TAM due to the fact that it is interested in investigating the manner and degree to which the adoption of AI is influencing academic researchers' views, opinion and perceptions of AI as well as their ability to use the AI technology effectively

Methodology

The study adopted the survey research design. Survey is a method of getting information about certain group of people who are representatives of a larger group of people (Creswell, 2009). It is a technique that is interested in diverse group of people who have different philosophical orientation about a phenomenon but share similarities in one key aspect to the other. Hence, this method was considered relevant for this study. Also, the quantitative survey was considered important because of the argument put forward by Creswell (2018) who emphasizes the value and importance of survey when he notes that “survey is probably the best research method available to the social scientist interested in collecting original data for the purpose of describing a population too large to be observed directly.

The population of the study comprised of lecturers in Nasarawa State University, Keffi and University of Abuja. An estimated population of 2, 006 was used. 793 for University of Abuja and 1, 033 for Nasarawa State University, Keffi. From the estimated total population, the study used Krejcie and Morgan sampling table of 1970 to get a sample size of 322.

The online questionnaire administration method was utilised. The initial draft of the questionnaire underwent face validation by the researchers. After personal scrutiny and feedback, it was reviewed by two additional research experts, including lecturers from the Department of Mass Communication at Nasarawa State University, Keffi, to refine and enhance the instrument before administration. The reliability of the questionnaire was confirmed using the test-retest method.

Descriptive statistics using mean deviation of five-point likert scale of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD), which the criterion mean was put at 3 is accepted result, while 2 is rejected result were used to present the data.

Data Presentation

Table 1: Respondents' Purpose of the Use of AI in Academic Research and Writing

Options	SA	A	SD	D	UD	Total	Mean Rating	Decision
AI is useful by promoting the development of ideas and the structuring of research methodologies	65	177	16	22	13	293	3.8	Accepted
AI is useful in reviewing volume of literature and synthesising them	33	210	10	19	21	293	3.7	Accepted
AI facilitates data collection, sorting and analysis.	57	192	18	11	15	293	3.9	Accepted
AI automates coding and analysis of qualitative data	93	156	14	9	21	293	3.9	Accepted
AI helps to check grammar and spelling	56	184	22	12	19	293	3.8	Accepted
Editing and management of data	39	218	9	17	10	293	3.8	Accepted
AI is important to academic writing and research because it provides academic writers the avenue to breakdown sentences, understand context, create plausible text, predicting how the writer can construct and structure sentences, processes large amount of information and assists to achieve coherence	55	193	11	14	20	293	3.8	Accepted

It can be deduced from the findings in the above Table that AI is impacting on academic writing and research because it makes collection, sorting, analysis and other aspects of research faster and easier.

Table 2: Responses on Issue Associated with the use of Artificial Intelligence for Academic Writing and Research

Options	SA	A	SD	D	UD	Total	Mean Rating	Decision
Use of AI affects creativity in scholarly writing and research	54	211	4	15	9	293	3.9	Accepted
Use of AI in academic writing and research raises concern of integrity, ethics and originality	74	203	2	9	5	293	4.1	Accepted
Insufficient knowledge on how to use AI for academic writing and research	60	197	18	11	7	293	3.9	Accepted
Difficulties in understanding some of the data that AI interprets, which can raise concerns about accountability and validity	45	223	12	4	9	293	4.0	Accepted

Data in Table 2 could be interpreted that the application of AI in academic writing and research is highly challenged by various issues such as integrity of data, insufficient knowledge, among others.

Discussion of Findings

The finding of the study indicated that the academics use AI to promote the development of ideas and the structuring of research methodologies, reviewing volume of literature and synthesising them, as well as ease of data collection, sorting and analysis. Further finding showed that AI is useful in terms of coding and analysis of qualitative data, checking grammar and spelling, editing and management of data. AI is important to academic writing and research because it provides academic writers the avenue to breakdown sentences, understand context, create plausible text, predicting how the writer can construct and structure sentences, processes large amount of information and assists to achieve coherence. The finding is in tandem with that of Efebeh, Orishede and Igoh (2024) who found that AI has positive impact on academic research among lecturers in Delta State University. The result of the study is also corroborated by an earlier one conducted by Uno et al (2024). Their research established that AI use in academic works was due to its ability to analyse large data within a short time, reduce plagiarism content and enhance review of literature. The finding of the study also justifies the adoption of Technology Acceptance Model (TAM), which explains the ability of the Artificial Intelligence communication technology to enhance the process of conducting academic studies, in addition to its capacity to analyse and handle large volume of information within a short time.

The result of the study also showed that application of AI in academic writing and research is challenged by some issues. This is because result established that AI affects academic creativity, raises concern of integrity, ethics and originality, inadequate knowledge on how to use AI for academic writing and research and difficulties in comprehending some of the data that AI interprets, which can raise concerns about accountability and validity. The finding here is in line with that of Demetriou (2024) who identifies the setbacks with the application of AI in academic writing and research to include concerns around plagiarism and quality, possible content reduction from algorithms, decrease in creativity and human scrutiny is still very important. The result also agreed with that of Malik et al (2023) who stated that the use of AI for academic writing is diminishing of creativity and critical thinking among scholars. The finding of the study equally supports the use of Technology Acceptance Model (TAM), which states

that the application of new communication technology in research also comes with some shortcomings.

Conclusion

The concern of the study was to assess the use of AI for research and academic writing among academic staff in Nasarawa State University and University of Abuja. From the findings, the researcher concluded that while AI utilisation is still at a moderate level, it has significantly impacted academic research and writing among the respondents. This implies that AI tools play a crucial role in developing lecturers' critical thinking, research, and communication abilities beyond the basic mechanics of writing that AI can automate. AI can aid in tasks like grammar checking, plagiarism detection and generating introductory text. The study, thus, concluded that the use of AI is limited by knowledge gap, ethical issues, data quality and integrity, among others.

Recommendations

1. Universities, polytechnics, and other higher institutions of learning in Nigeria should develop guidelines for ethical and effective use of AI in academic writing and research.
2. Since research is an ongoing activity, more studies should be conducted in other universities in Nigeria and elsewhere.

Ethical Approval

Ethical approval was sought from the Department of Mass Communication, Nasarawa State University, Keffi to undertake the research.

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