



Knowledge and Utilisation of Artificial Intelligence Research Tools among University Academics in Taraba State, Nigeria

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Abstract

This study examined the knowledge and utilisation of artificial intelligence (AI) research tools among university academics in Taraba State, Nigeria. Employing a quantitative cross-sectional survey design, data were collected from 412 academics across Federal University Wukari, Taraba State University Jalingo, and Kwara University Wukari through an online survey. The findings revealed a low level of knowledge and poor adoption of AI research tools, with only a few academics indicating familiarity with tools such as ChatGPT, Grammarly, and Quillbot. Most respondents were unfamiliar with tools like Zotero, Perplexity, Mendeley, and Scopus AI. The primary purposes for using AI tools included idea generation, editing, plagiarism checks, and manuscript drafting. Factors hindering adoption included ethical concerns, limited access due to costs, and a lack of understanding of the perceived usefulness of these tools. The study recommends interventions such as conferences and workshops to raise awareness and improve knowledge of AI tools. It also advocates for the provision of premium AI tools in universities to enhance access for academics and the establishment of ethical guidelines to address concerns discouraging the adoption of AI tools for research in universities across Taraba State.

Keywords: Artificial intelligence, AI research tools, academics, knowledge, utilisation

Introduction

Technology has rapidly developed over the last few decades, transforming cultural, social, and economic dynamics worldwide. One of the most recent developments in technology is Artificial Intelligence (AI). AI refers to an advanced group of computer software or system designs capable of performing tasks ordinarily carried out by humans. Consequently, AI provides solutions ranging from complex organisational tasks to everyday personal activities. The advent of Artificial Intelligence has heralded a new era of transformation and automation across various sectors (Rashid & Kausik, 2024), including health, security, banking, commerce, communication, entertainment, and education where the profound impact has been observed in learning, teaching, administration, and especially academic research and writing.

In the realm of academic research, the influence of AI is significant. Researchers (Khalifa & Albadaawy, 2024; Ugwu et al., 2024) assert that AI tools are increasingly being leveraged to assist in various aspects of the research and writing process. For instance, several AI tools can help researchers ideate and compose initial drafts of manuscripts, while others automate referencing and streamline the citation and bibliography creation process (Adams & Chuah, 2022). Additionally, AI-powered tools enhance the clarity and coherence of scholarly texts through grammar checks, paraphrasing, and editing (Adams & Chuah, 2022). Furthermore, some AI tools provide scientists with immediate answers and insights into their research queries, access cutting-edge literature, and offer reviews of such literature, thereby dramatically accelerating the overall pace of research and the reporting of findings (Guler et al., 2024; Chubb et al., 2021). There is no doubt that AI applications can bolster research productivity. However, they have raised ethical concerns, including issues of authorship, originality, and attribution (Perkins & Roe, 2024). While these concerns are legitimate, they are often common with any technological innovation. The fact remains that AI is here to stay and will continue to evolve, transforming research as it has in other fields. Thus, it is crucial for the research community, particularly academics, to develop knowledge of AI research tools and adopt them responsibly to advance knowledge.

Academics in Nigerian public universities face significant challenges in accessing and adopting new innovations. These challenges often include poor infrastructure, inadequate funding, low digital literacy, resistance to change, and lack of motivation due to poor welfare conditions (Ayoko, Peter & Jegede, 2023). These issues have rendered many Nigerian academics slow adopters of valuable educational innovations, thereby undermining the quality of education in the country compared to global best practices. Considering that the integration of AI into academic research is increasingly recognised as a crucial step towards fostering a competitive and globally aligned education system, this study explores the level of knowledge, extent of AI adoption for research purposes, usage patterns, and barriers faced by academics in Nigerian universities, particularly in Taraba State.

Statement of the Research Problem

Artificial Intelligence (AI) has become a pivotal tool in academic research, offering capabilities that enhance efficiency, accuracy, and innovation in knowledge production. Globally, scholars leverage AI technologies for tasks such as data analysis, plagiarism detection, and manuscript preparation. While several studies have been conducted on the role of AI in education, limited research has focused on the specific knowledge levels and adoption rates of AI tools among

academics in Nigerian universities. Most Nigerian studies (e.g., Mafara et al., 2024; Okunade, 2024; Edung, 2024) on AI adoption focus on broader educational applications, such as teaching and learning, leaving a significant gap in understanding its use specifically for research purposes.

This gap is particularly evident as the application of AI in academic research remains in its early stages (Pigola et al., 2023), especially in developing countries like Nigeria. Only a few studies (e.g., Ukeh & Anih, 2024; Idris & Umar, 2024) have investigated the adoption of AI research tools among Nigerian academics. This lack of research creates a critical gap in understanding the levels of awareness, knowledge, utilisation patterns, and barriers academics face regarding the use of AI tools in their profession, particularly in research. This study seeks to fill this gap by examining the subject from the perspective of academics in universities in Taraba State, a number of universities and unique infrastructural and resource limitations.

Specific Objectives

The study aimed to achieve the following specific objectives:

1. To determine the level of knowledge of AI research tools among university academics in Taraba State.
2. To examine the extent to which academics in universities in Taraba State have used AI research tools.
3. To determine the purposes for which university academics in Taraba State use AI research tools.
4. To identify the factors hindering the adoption of AI research tools among university academics in Taraba State.

Scope of the study

This study focuses on examining the knowledge and usage patterns of AI research tools, as well as the factors hindering their adoption, among academics in three universities in Taraba State: Federal University Wukari, Taraba State University Jalingo, and Kwara University Wukari. These universities were purposefully selected because they are conventional, not-for-profit institutions with varying ownership patterns: Federal, State, and Community universities. Additionally, these universities have a significant number of academics. Although there are several AI-powered research tools, the researchers focus on ChatGPT, Grammarly, QuillBot, Perplexity, Scopus AI, and Mendeley AI. The rationale for focusing on these tools is that they are widely used, basic, and general tools that can be employed by all academics, regardless of their research area.

Significance of the Study

This study will contribute to knowledge regarding the awareness and adoption of AI tools for research purposes among academics in Nigeria, serving as a useful reference for future researchers. It can also inform the management of universities, particularly in Taraba State, on the need to provide premium AI tools and training programmes tailored to improve academics' skills in using these tools. This would enable them to conduct cutting-edge research and enhance teaching methodologies. Additionally, the study provides empirical evidence that can help the management of universities in Taraba State develop strategies and policies to promote the responsible adoption of AI research tools, thereby contributing to institutional efficiency.

Literature Review

Artificial Intelligence (AI)

Numerous scholars have attempted to define AI. Kaplan and Haenlein (2019) define AI as the capacity of a system to accurately explain and learn from input data, then apply what it has learned to accomplish a specific goal. Ihejirika, Ogana, and Uzezi (2023) define AI as any machine or computer that uses aspects of human-like thinking to complete a job. Similarly, Pereira, Hadjielias, Christofi, and Vrontis (2023) describe AI as a specialised branch of computer science dedicated to creating machines capable of performing tasks that typically require human intelligence. Khaleel, Jebrel, and Shwehdy (2024) add that AI is the cornerstone of modern computer science and is developed based on algorithms and models that replicate and potentially surpass human cognitive functions, enabling it to perform tasks and solve problems originally handled by humans. Thus, AI can think independently, yet more efficiently than humans. According to Nwakunor (2021), AI refers to computer-controlled robots that think intelligently like humans. These robots are electronically controlled with the aid of computers, mimicking the competencies of the human mind. Similarly, Strusani and Hounghonon (2019) define AI as a combination of large volumes of data and computational power to simulate human intellectual abilities, such as reasoning, language processing, perception, vision recognition, and spatial processing.

From the above explanations, it can be deduced that AI refers to machines or computer systems designed, based on large data volumes and computational power, to replicate human-like thinking and perform tasks requiring human intelligence. The ability of AI tools to perform the tasks they are designed for depends on accurate simulation and prompts provided to the system. Although AI has become more prominent in recent times, its development can be traced back to the 1940s and 1950s when scientists from various fields began discussing the possibility of creating an artificial brain. By 1956, the field of artificial intelligence research was established as an academic discipline. However, development in the field of AI stagnated due to challenges such as a lack of funding, until the aftermath of the September 11, 2001, attacks, which renewed interest and funding for threat-detection AI systems (Kaur, 2018). Since then, the field of AI has continued to advance, with numerous tools being deployed across almost all sectors, including health, security, agriculture, education, and entertainment, among others.

AI Research Tools

AI research tools are specialised software designed to assist researchers in various aspects of the research process, such as automating data collection from multiple sources, assisting with literature reviews by summarising academic papers and identifying research gaps, data analysis, presentation, visualisation, editing, paraphrasing, formatting text, and plagiarism detection, which ensures originality in written content (Khalifa & Albadawy, 2024; Bolanos et al., 2024; Jhaji et al., 2024). There is virtually no aspect of research that lacks AI tools to complement the work of a researcher. AI-powered research tools are numerous and widely used across disciplines, including the sciences, arts and humanities, social sciences, management sciences, agriculture, engineering, and medical sciences, among others. While some AI research tools are specifically designed for use within a given discipline, many others are versatile and applicable across different fields. Examples include Semantic Scholar for discovering research papers, ChatGPT for brainstorming and summarisation, Zotero and Mendeley for citation management, and Grammarly and QuillBot for writing enhancement.

Despite their significance, research AI tools have attracted several criticisms, which have hindered their widespread adoption among academics. Critics argue that these tools can lead to “creative destruction,” where researchers become overly reliant on AI and neglect the critical thinking and creative problem-solving skills essential for meaningful research. This, according to critics, can affect the originality and integrity of content (Agbor et al., 2024; Tarlan et al., 2024b). However, proponents (e.g. Obande, Adegioriola & Ado, 2024; Khalifa & Albadawy, 2024) of AI research tools contend that their utilisation holds great promise in terms of increased efficiency, improved accuracy, enhanced objectivity, updated context, and time-saving capabilities. Benke and Szőke (2024) conclude that AI research tools are indispensable in academia, and the most crucial consideration is ensuring their ethical utilisation by academics and scientists.

Review of Empirical Studies

Numerous studies have explored the use of AI tools for research among academics, but relatively few are readily accessible. Khalifa and Albadawy (2024) conducted a study on the role of artificial intelligence in academic writing and research, focusing on AI’s influence on research productivity, including writing assistance, grammar improvement, and structure optimization. The study utilized a systematic review of literature from databases such as PubMed, Embase, and Google Scholar, published since 2019. Their findings showed that AI, particularly ChatGPT, has a significant impact on academic writing and research by facilitating idea generation, supporting research design, improving content structuring, aiding literature reviews and synthesis, enhancing data management and analysis, and supporting editing, review, and publishing processes. Livberber and Ayvaz (2023) also examined ChatGPT’s impact in academia, using in-depth interviews with 10 academics. The study found a generally positive perception of ChatGPT as a useful tool in scientific research and education, although concerns about plagiarism and misinformation were raised. Similarly, Ekundayo et al. (2024) conducted a focus group study with academics from various institutions worldwide, using Zoom video conferencing. Their study found that AI is perceived positively, especially in enhancing the efficiency and accuracy of data analysis, but participants acknowledged the risks of bias, particularly related to data selection and algorithmic biases. Moukhliiss, Lahyani, and Diab (2024) explored AI’s impact on research and higher education in Morocco. Through literature reviews, case studies, and expert opinions, their study concluded that while AI enhances research methodologies and fosters innovation, ethical concerns hinder its widespread adoption in Moroccan academia.

In Nigeria, a study by Madu and Musa (2024) at the Federal University Wukari explored lecturers’ awareness of AI within the Faculty of Education. Using a correlational design, the study found a moderate level of awareness of AI among lecturers, with a positive relationship between AI awareness and digital competence. Similarly, research by Idris and Umar (2024) in universities in Katsina State, Nigeria, identified the frequent use of AI tools such as Rytr, Quillbot, Elicit, and ChatGPT among academics. The study revealed that AI tools were commonly used for tasks like information retrieval, bibliography management, citation, and plagiarism prevention. In contrast, Ukeh and Anih (2024) found relatively low adoption of AI tools for teaching and research purposes among lecturers at Federal University Otuoke, Bayelsa State. Agbor et al. (2024) explored both the potential and the challenges of AI in academic research. Their exploratory research revealed that while AI tools help analyze large datasets efficiently, reduce plagiarism, and improve literature reviews, they could undermine critical thinking and creativity among academics. Furthermore, AI may encourage machine-mediated plagiarism, referred to as “AIgiarism.”

Despite the growing body of literature on AI, there remains a significant research gap in understanding the knowledge and use of AI tools in academic research within Nigerian universities, particularly in Taraba State. While studies have been conducted in other parts of Nigeria (e.g., Madu & Musa, 2024; Idris & Umar, 2024), the findings from these studies are limited in scope, especially considering the lack of research in Taraba State. The only study conducted in the region, by Madu and Musa (2024), focused on a single faculty at Federal University Wukari, limiting the generalizability of its findings. Therefore, this research aims to fill the gap by examining the knowledge and use of AI research tools among academics in Taraba State.

Theoretical Framework

Various theories and models have been proposed to explain acceptance behaviour toward information technology, with the Technology Acceptance Model (TAM) remaining one of the most widely used frameworks. Originally developed by Fred Davis in 1989 as part of his doctoral thesis, TAM posits that the acceptance and use of technology are influenced by two primary factors: perceived usefulness (PU) and perceived ease of use (PEOU) (Ma & Liu, 2011). According to Davis, PU refers to the degree to which a technology is seen as beneficial for achieving specific goals, while PEOU describes how easy a technology is perceived to use and learn (Wicaksono & Maharani, 2020). The model suggests that individuals are more likely to adopt a new technology if they believe it will enhance their performance or productivity, and if it is easy to use. Over the years, TAM has been widely validated through research on individual acceptance behaviour toward various information systems, such as online shopping and e-learning platforms.

Despite numerous modifications and extensions to TAM by various scholars, the original model remains a prominent theoretical framework, particularly in understanding the adoption of new technologies like AI (Wang et al., 2023). For this study, TAM serves as an appropriate framework for examining the knowledge and adoption of AI research tools among academics. It is assumed that academics in universities in Taraba State are likely to adopt AI tools if they perceive these tools as useful for their research activities. Specifically, if academics recognise that AI tools can save time and enhance research quality, they are more likely to adopt them. Furthermore, if they possess the necessary skills to use these tools effectively, adoption is expected to be higher.

Research Methodology

This study utilised a quantitative cross-sectional survey design, which is considered highly effective due to its ability to collect data from a large sample and its adaptability and generalizability (Babbie, 2010). The study targeted academics from Federal University Wukari, Taraba State University Jalingo, and Kwararafa University Wukari. To recruit participants, the researchers employed a non-probability sampling technique known as virtual snowball sampling (Omar & Ahrari, 2020). Virtual snowball sampling involves participants referring others via digital platforms like email and WhatsApp. This method is particularly useful for accessing hard-to-reach respondents due to time, distance, and financial constraints, which applied to this study (Baltar & Brunet, 2012). Data were collected from 412 academics across the three selected universities via an online survey, accessible through the link (<https://forms.gle/xM6MGhEjNT1gXr6U9>). The data were analysed using descriptive statistical tools.

Data Presentation

Table I: Characteristics of the respondents.

Demographic Items	Categories	Frequency	Percentage (%)
Age Range	18-30	31	7.52%
	31-40	108	26.21%
	41-50	181	43.93%
	51 and above	92	22.34%
Gender	Male	309	75.00%
	Female	103	25.00%
Highest Academic Qualification	First degree	61	14.81%
	Master's degree	238	57.77%
	Doctoral degree	113	27.43%
Academic Discipline	Arts	28	6.80%
	Social Sciences	122	29.61%
	Agriculture	29	7.04%
	Engineering	20	4.85%
	Sciences	89	21.63%
	Education	47	11.41%
	Management Sciences	69	16.76%
	Others	12	2.91%
University	FUW	158	38.35%
	TSUJ	219	53.16%
	KWU	35	8.50%
Years of Experience	Less than 5 years	109	26.46%
	1-5 years	169	41.02%
	6-15 years	89	21.60%
	16 years and above	45	10.92%

(N=412)

Table I above reveals data regarding the composition of participants in the study. According to the results, most respondents (43.93%) fall within the age range of 41-50, indicating that the majority are mid-career academics with significant experience in the academic field. This is followed by those aged 31-40 (26.21%), and 22.34% of the participants are aged 51 years and above. The representation of younger academics (18-30) is the lowest at 7.52%. A significant majority of respondents are male (75%), while females constitute only 25% of the sample. Regarding academic qualifications, most respondents hold a Master's degree (57.77%), with 27.43% having a doctoral degree, suggesting a highly qualified academic population. First-degree holders make up 14.81% of the participants. In terms of academic disciplines, Social Sciences (29.61%) dominate the sample, followed by Sciences (21.63%) and Management Sciences (16.76%). Disciplines such as Arts, Agriculture, Education, and Engineering are less represented. The respondents are fairly distributed across the three universities: 53.16% are from Taraba State University, Jalingo (TSUJ), 38.35% from Federal University, Wukari (FUW), and 8.50% from Kwararafa University, Wukari (KWU). A large portion of respondents (41.02%) has 1-5 years of experience, while 26.46% have less than 5 years. Academics with 6-15 years and over 16 years of experience constitute 21.60% and 10.92%, respectively. The demographic data above suggest the prevalence of diverse

perspectives on the knowledge and utilisation of artificial intelligence research tools within the study population.

Table II: Knowledge level of AI research tools among Academics in Taraba State (RQ. 1)

AI Research Tools	Very Familiar	(%)	Somewhat Familiar	(%)	Not Familiar at All	(%)
ChatGPT	216	52.43%	119	28.88%	77	18.69%
Grammarly	201	48.79%	109	26.46%	102	24.76%
Zotero	42	10.19%	138	33.50%	232	56.31%
Quillbot	198	48.06%	115	27.91%	99	24.03%
Perplexity	32	7.77%	152	36.89%	228	55.34%
Mendeley	49	11.89%	197	47.82%	166	40.29%
Scopus AI	37	8.98%	169	41.02%	206	50.00%

(N=412)

Table II above presents data on the knowledge level of academics in Taraba State regarding various AI research tools. ChatGPT emerges as the most recognised tool, with 52.43% of respondents being very familiar, 28.88% somewhat familiar, and 18.69% not familiar at all. Similarly, Grammarly is well-known, with 48.79% very familiar and 26.46% somewhat familiar, though 24.76% of respondents report no familiarity. Quillbot also shows high recognition, with 48.06% very familiar and 27.91% somewhat familiar, leaving 24.03% unfamiliar. In contrast, tools like Zotero, Perplexity, Mendeley, and Scopus AI have significantly lower levels of familiarity. For Zotero, only 10.19% are very familiar, while 33.50% are somewhat familiar, and a striking 56.31% are not familiar at all. Similarly, Perplexity has a low familiarity rate, with just 7.77% very familiar, 36.89% somewhat familiar, and 55.34% not familiar. Mendeley and Scopus AI also reflect limited knowledge, with only 11.89% and 8.98% very familiar, respectively, while large proportions remain unfamiliar. These results suggest that the respondents have moderate knowledge of AI tools like ChatGPT, Grammarly, and Quillbot but most of them have poor knowledge of Zotero, Perplexity, Mendeley, and Scopus AI.

Table II: Utilization level of AI research tools among Academics in Taraba State (RQ. 2)

AI Research Tools	Very Frequently	(%)	Occasionally	(%)	Rarely	(%)	Never	(%)
ChatGPT	118	28.64%	168	40.78%	41	9.95%	85	20.63%
Grammarly	95	23.06%	64	15.53%	152	36.89%	101	24.51%
Zotero	0	0.00%	22	5.34%	162	39.32%	228	55.34%
Quillbot	54	13.11%	106	25.73%	93	22.57%	159	38.59%
Perplexity	15	3.64%	59	14.32%	91	22.09%	247	59.95%
Mendeley	25	6.07%	62	15.05%	119	28.88%	206	50.00%
Scopus AI	10	2.43%	34	8.25%	139	33.74%	229	55.58%

(N=412)

Table II presents data on the utilisation levels of AI research tools among academics in Taraba State. The results indicate that ChatGPT is the most widely utilised tool, with 28.64% of respondents using it very frequently and 40.78% occasionally. Grammarly follows, with 23.06% using it very frequently and 15.53% occasionally, though a significant portion (36.89%) use it rarely, and 24.51% never use it. In contrast, tools such as Zotero and Scopus AI exhibit low utilisation rates; 55.34% and 55.58% of respondents, respectively, have never used these tools. Similarly, Perplexity and Mendeley are rarely or never used by a substantial percentage of respondents (81.81% and 78.88%, respectively, combining the 'rarely' and 'never' categories).

Quillbot also shows moderate use, with 13.11% using it very frequently and 25.73% occasionally, while 38.59% have never used it. These results generally suggest poor adoption and utilisation of AI research tools among the academics.

Fig. I. Purpose of Utilization of AI research tools among Academics in Taraba State (RQ. 3)

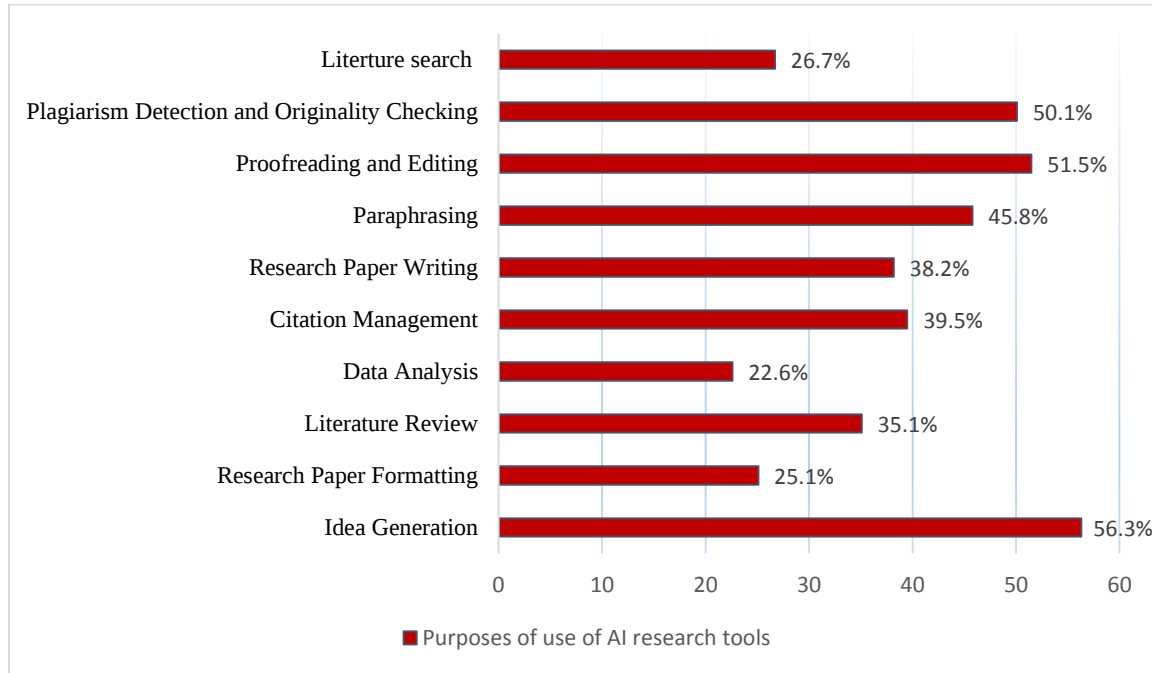


Figure I above illustrates the various purposes for which academics in Taraba State utilise AI research tools. The results revealed that the majority of respondents, representing 56.3%, used AI research tools for idea generation, followed by 51.5% who indicated that they used the tools for proofreading and editing, and 50.1% who used the tools for plagiarism detection and originality checking. Furthermore, 45.8% reported using the tools for paraphrasing, while 39.5% used them for citation management, followed by 38.2% who used them for manuscript drafting. Additionally, 35.1% indicated using the tools for literature review, 26.7% for literature search, 25.1% for research paper formatting, and the least, 22.6%, used the tools for data analysis. Based on the results, the most commonly used AI tools among the academics were for idea generation, editing and proofreading, plagiarism checks, and manuscript drafting.

Fig. II: Challenges hindering the adoption of AI research tools among Academics in Taraba State (RQ. 4).

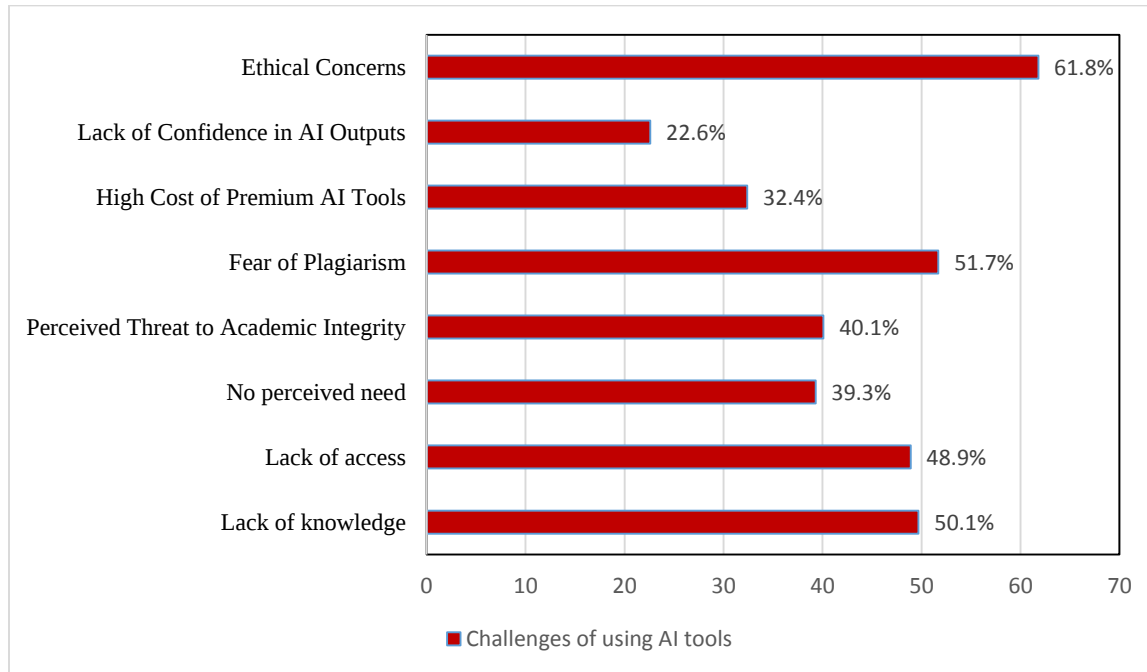


Figure II above presents the challenges hindering the adoption of AI research tools among academics in Taraba State. The primary challenge, reported by 61.8% of respondents, is ethical concerns, with 51.7% identifying issues of plagiarism as a major factor discouraging their adoption of AI research tools. Furthermore, 50.1% cited a lack of knowledge about the tools as a major barrier to adoption. Similarly, 48.8% reported a lack of access to the tools, while 32.4% pointed to the high cost of the tools as a deterrent. Additionally, 39.3% expressed that they do not perceive a need for the tools in their academic endeavours, and 22.6% revealed that they lack confidence in AI outputs, which further discourages them from adopting AI research tools for their research and report writing.

Discussion of Findings

The first objective of the study was to determine the knowledge level of AI research tools among university academics in Taraba State. The findings revealed that academics have a low level of knowledge regarding AI research tools. Only a few respondents indicated familiarity with AI tools such as ChatGPT, Grammarly, and Quillbot, while most showed a total lack of familiarity with Zotero, Perplexity, Mendeley, and Scopus AI. These findings align with a study by Khalifa and Albadawy (2024), which indicated significant awareness of ChatGPT among academics. Similarly, the results support prior studies by Madu and Musa (2024) and Ukeh and Anih (2024), which established that academics in Nigerian universities, particularly in Katsina and Bayelsa states, respectively, have low knowledge of AI tools for research purposes. According to previous studies and theories, including the Technology Acceptance Model (TAM), a gap in knowledge can significantly lead to poor attitudes and low adoption of new technologies.

Secondly, the study sought to examine the extent to which academics in universities in Taraba State have used AI research tools. The results revealed a generally poor adoption of AI tools.

Specifically, while ChatGPT, Grammarly, and Quillbot are occasionally used among academics, other surveyed tools (Zotero, Perplexity, Mendeley, and Scopus AI) were rarely used. The findings align with prior studies by Livberber and Ayvaz (2023) and Idris and Umar (2024), which show that ChatGPT is more commonly used among academics compared to other AI tools. Similarly, Agbor et al. (2024) and Madu and Musa (2024) explained that the adoption of AI research tools among academics in Nigeria is very low. This is consistent with the submission by Pigola et al. (2023) that the adoption of AI in research is still in its infancy worldwide, as many journals and research organisations have yet to establish standards regarding the use of these tools. This lack of standards contributes to the lack of awareness and adoption of AI tools among scientists, particularly in developing nations like Nigeria.

Thirdly, the study aimed to ascertain the purposes for which some academics used AI research tools. The results indicated that the dominant reasons for adopting AI tools among academics were for idea generation, editing and proofreading, plagiarism checks, and manuscript drafting. These findings support previous studies, such as Khalifa and Albadawy (2024), who revealed that AI tools have become significant research aids, facilitating idea generation, improving content clarity and quality, and supporting literature review and analysis, among other functions. Similarly, Idris and Umar (2024) found that academics in Katsina State used AI research tools for information retrieval, bibliography and citation management, as well as plagiarism prevention. This also aligns with the Technology Acceptance Model (TAM), which posits that the perceived usefulness of a technology encourages its adoption. This study established that the few academics who used AI tools were motivated by the various benefits these tools offer in their research work.

Furthermore, the study examined the factors hindering the adoption of AI research tools among academics. It was revealed that several factors discouraged most academics from using AI research tools. Key among these factors were ethical concerns, such as issues of plagiarism, lack of knowledge about the AI research tools, limited access to the tools due to high costs, and a lack of understanding of the perceived usefulness of AI tools. The findings align with several previous studies and submissions regarding issues related to the under-utilisation of AI tools in research and academics in general. For instance, researchers (Moukhliiss, Lahyani & Diab, 2024; Khalifa & Albadawy, 2024; Agbor et al., 2024) have earlier revealed that ethical concerns, such as plagiarism and misinformation, are critical issues associated with the adoption of AI tools. Instructively, the Technology Acceptance Model (TAM) explains that the perceived usefulness (PU) of a given technology influences its adoption. In line with this, the study found that a significant number of academics in Taraba State have yet to perceive the usefulness of AI tools in research. This lack of understanding of the tools' importance has significantly contributed to the existing poor utilisation among academics.

Conclusion

This study establishes that despite the rapid development and growing importance of AI research tools in enhancing the quality of research and publications, knowledge and utilisation of the tools among academics in universities within Taraba State remain poor. This can be attributed to a lack of understanding regarding the existence and significance of AI research tools, as well as concerns surrounding ethical issues, such as plagiarism and the potential for these tools to generate misleading content, among other research ethics considerations. The gaps in the use of AI tools among academics in Taraba State have undoubtedly denied them the numerous benefits, such as

increased speed and efficiency that come with the adoption of AI research tools. Therefore, there is a clear need for intervention to raise awareness, increase knowledge, and promote the utilisation of AI tools for research in universities across the state.

Recommendations

Based on the findings, the researchers recommend the following:

- i. University management should organise conferences to raise awareness and knowledge of a wide range of AI tools for research, beyond ChatGPT, Grammarly, and Quillbot.
- ii. University management should organise workshops and seminars to educate academics about the importance of AI research tools and provide the skills needed to deploy these tools ethically.
- iii. It is critical to address the ethical concerns surrounding AI research tools; therefore, universities should collaborate to develop ethical guidelines and best practices for using AI tools in research.
- iv. There should be concerted efforts to make these tools more accessible and affordable in universities in Taraba State so that more academics can benefit from their use.

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