**Lecturers’ Perceptions and Utilization of Artificial Intelligence (AI) in Research and Assessment Practices in Public Tertiary Institutions in Zamfara State, Nigeria**

**Abstract:**

Artificial intelligence (AI) is one of the driving forces behind the 4.0 industrial revolution. AI is an innovation that brought about sustainable development in education in the area of teaching, learning, research and assessment. The aim of this study is to examine the lecturers’ perceptions and utilization of Artificial Intelligence (AI) in research and assessment practices in tertiary institutions in Zamfara State, Nigeria. The descriptive survey design was adopted for the study. The population of the study comprised all the 954 academic staff in the three (3) Federal Government owned tertiary institutions in Zamfara State. The sample size of the study is 253 academic staff selected using proportionate stratified random sampling technique. The instrument used for data collection is a researcher designed questionnaire termed “Perceptions and Utilization of Artificial Intelligence in Research and Assessment Practices Questionnaire (PUAIRAPQ)”. Both face and content validity of the instrument were established, and the internal consistency of the instrument was determined using Cronbach Alpha method with a reliability index of .79 which shows that the instrument was reliable. The Data collected was analyzed using descriptive of Weighted Mean and Standard Deviation. The results of the findings among others shows that lecturers perceived Artificial Intelligence (AI) as tools that optimize research design and methodology, improved research quality. and enhances the validity and reliability of assessments. It also revealed low utilization of AI tools in research and assessment practices among lecturers of public tertiary institutions in Zamfara State. The study recommends further efforts and initiatives by the institutions to promote the effective implementation of AI tools in research and assessment practices.

**Keywords**: Artificial Intelligence, Lecturers, Utilization, Research and assessment practice

**Introduction**

Artificial Intelligence refers to a computer systems capable of performing tasks that typically require human intelligence. This includes a range of technologies, including machine learning, natural language processing, and data analytics (American College of Education, 2023). AI according to Sahil et al. (2023) refers to a systems that present intelligent behaviour through the analysis of the environment and performing an action, with certain autonomy, so that the specific task can be achieved. Buabbas et al. (2023) defined AI as a making machines capable of simulating intelligence by giving computer human-like capabilities, such as understanding, reasoning, and problem solving. Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think, learn, and solve problems like humans. These systems are capable of performing tasks that typically require human cognition, such as understanding language, recognising patterns, making decisions, and adapting to new information (Russell & Norvig, 2020).

Artificial Intelligence is rapidly transforming various aspects of our lives, and research and assessment practices in education are no exception. The integration of AI into education has ushered in a new era of possibilities particularly in the realm of educational research and assessment. Artificial Intelligence (AI) has emerged as a transformative force across various sectors, offering innovative solutions to complex problems. In the realm of education, AI holds the potential to revolutionize traditional teaching methods and streamline research processes (Ukeh & Anih, 2024). AI tools has presented a wide array of applications that can significantly enhance academic research. These tools aids in the discovery of new sources for literature reviews and effectively synthesize vast amounts of information. The automation of literature reviews, organization of references, and summarization of complex studies are key benefits offered by AI.

Artificial Intelligence (AI) is revolutionising the research landscape by introducing advanced tools and methodologies that enhance the effective, efficiency, accuracy, and scope of academic and research inquiry. AI driven research methods like natural language processing (NLP) and machine learning (ML) allow researchers to analyse vast amounts of data, while AI-powered research networks and collaborative platforms foster knowledge sharing and interdisciplinary collaborations (Ibrahim, 2024). AI assist researchers across various stages of their work, including data analysis, academic writing, and fostering collaboration among the researchers. AI has significantly enhanced research collaboration and knowledge sharing by enabling the creation of AIpowered research networks and collaborative platforms. Platforms like ResearchGate and Academia.edu use AI to recommend academic papers, identify collaborators, and share research projects. These tools connect researchers globally, facilitate data sharing, and promote interdisciplinary collaboration, advancing scientific knowledge (Van Noorden, 2014).AI according to Ibrahim (2025) plays a vital role in conducting research, transforming various aspects of research phases: Such as*Literature Review:* AI-assisted literature analysis and summarization;*Hypothesis Generation* AI-driven formation and testing hypothesis;*Data Collection:* AI-powered data collection tools and survey analysis; *Data Analysis:* AI-driven statistical analysis, visualisation, and modelling, and *Result Interpretation:* AI-assisted result interpretation and recommendation.

The use of AI in research promises increased time efficiency and the potential for uncovering deeper insights and understanding from the research information. Specific examples of AI research tools include platforms like Semantic Scholar, NVivo for qualitative data analysis, Google AutoML for building machine learning models, and QuillBot for paraphrasing texts (Ukeh & Anih, 2024). AI also facilitate research by summarizing websites and scholarly articles, answering specific questions, and generating outlines of information. Furthermore, AI provide a valuable aid in the initial stages of research, such as brainstorming ideas, narrowing down research topics, identifying relevant keywords, and even adapting the style of writing.

AI also provide support throughout the dissertation process, from topic selection and literature review to outlining, drafting, editing, data analysis, and managing citations. Generative AI, in particular, finds applications in literature review, research infrastructure development, data collection and generation, as well as in the initial stages of ideation and hypothesis generation (Ibrahim, 2024). Ethical considerations are paramount when using AI in research, including addressing potential biases in algorithms and data, ensuring the validity and reliability of AI-generated outputs, maintaining transparency about AI's role in the research process, and safeguarding data privacy (Van Noorden, 2014). Lecturers in Nigerian universities have shown awareness of AI's potential in both teaching and research (Ibrahim 2024), and a correlation has been observed between lecturers' awareness of AI and their overall digital competence (Madu & Musa 2024).

AI is also performing a significant role in assessment process, AI is being explored for various applications within higher education, including automated grading, plagiarism detection, and the provision of personalized feedback (Hurix Digital, 2024). The integration of AI into education has also led to the development of AI-powered assessment tools that are revolutionizing the way educators evaluate student performance and pass a valuable decission. Two significant innovations in this area are automated grading systems and intelligent assessment design, both of which improve efficiency, provide personalized feedback, and enhance the overall learning experience (Ibrahim, 2024). Automated grading, or AI-assisted grading, uses machine learning to evaluate student assignments, especially in large classes where manual grading is time-consuming. These systems grade multiple-choice, true/false, and essay-based questions with high accuracy, analysing key words and arguments to assess relevance and quality (Nicolas et al., 2020). Platforms like Turnitin detect plagiarism and provide feedback, while Gradescope grades mathematical solutions (Piech et al., 2015). Automated grading saves time, ensures consistent evaluation, and provides timely feedback, essential for student progress.

Universities are increasingly recognizing the need to support their staff in becoming AI-literate and in adapting their assessment methods to ethically incorporate AI technologies. AI has offered several potential benefits for assessment, such as enabling personalized and interactive learning experiences, providing efficient feedback, enhancing educational accessibility, and offering efficient study tools (Eklavvya, 2024; Hurix Digital, 2024). AI systems are also capable of detecting instances of plagiarism, thereby promoting academic integrity (Hurix Digital, 2024). Furthermore, AI can contribute to the design of more effective assessments by enabling enhanced question types, measuring complex competencies, providing real-time feedback, increasing accessibility, and adapting to the learner's ability. AI-powered tools can also assist with administrative tasks related to assessment, such as grading and scheduling (Eklavvya, 2024). Ethical implications, particularly concerning data privacy and fairness, are critical considerations in the use of AI for assessment (UIC Applied Health Sciences, 2024). AI can aid educators by assisting with grading and providing feedback on student work, potentially encouraging the adoption of more authentic assessment methods and facilitating immediate feedback to students.

However, the advent of GenAI tools poses challenges to the validity of traditional assessment methods, as students can generate outputs that may not genuinely reflect their own competencies (Bañez et al., 2024; Corbin et al., 2025; UIC Applied Health Sciences, 2024). This has led to concerns among educators regarding the ambiguity of accep Supp AI use in assessment and the need for clear guidelines (Corbin et al., 2025). Some educators express strong concerns that generative AI has fundamentally altered higher education assessment, making it challenging to accurately verify students’ learning (Bañez et al., 2024). There is a caution against over-relying on AI detection services due to their limited accuracy, and suggestions have been made to modify assignments to emphasize interactive feedback and revision, as well as to design assessments that are inherently difficult for AI to complete (Corbin et al., 2025).

Nigerian lecturers generally view AI tools as important for teaching and learning (Ibrahim 2024; Akinjide & Omotayo, 2024), a perspective that likely extends to their potential in the research and assessment practices. Lecturers have also acknowledged AI's capacity to enhance assessment methods (Ibrahim et al., 2024). Research indicates a connection between university teachers' perceptions of using AI tools and their inclination to personalize AI use in assessment and research (Ibrahim et al., 2024). However, some lecturers in Nigerian university also perceive the current utilization of AI tools for effective instruction, including assessment, as inadequate (Idika et al., 2024). There are significant barriers to AI adoption in research, including a shortage of AI experts, high costs of AI software and hardware, and ethical concerns regarding the use of AI in sensitive research areas (Miller, 2019). Nigerian institutions must prioritise capacity building in AI and develop strategies for sustainable funding.

**Statement of the Problem**

While the global discourse highlights the increasing integration of AI in higher education for research and assessment, and studies within Nigeria touch upon technology adoption (Akuegwu et al., 2022; Paradiso Solutions, 2024) and general perceptions of AI among lecturers (Nathaniel et al., 2021; Olaseni et al., 2023), there remains a notable gap in understanding the specific perceptions of teachers in Nigerian public tertiary institutions regarding the utilization of AI in their research and assessment practices. Nigerian universities are still in the early stages of fully exploring AI in their educational activities (Akinjide & Omotayo, 2024), with factors such as lecturers' attitudes potentially playing a significant role in its adoption (Sarfo et al., 2024). Challenges such as inadequate infrastructure, insufficient training and support, and concerns about ethical implications further complicate the landscape of AI integration in Nigeria (Sarfo et al., 2024). Given the potential of AI to transform educational practices, a thorough investigation into the perceptions of educators who are at the forefront of research and assessment within the unique context of Nigerian public tertiary institutions is crucial. Understanding their awareness, attitudes, concerns, and perceived benefits of using AI tools in these specific domains will provide valuable insights for developing targeted training programs, addressing specific challenges, and formulating effective policies that promote the beneficial and ethical integration of AI in Nigerian higher education. This study aims to address this research gap by exploring the perceptions of teachers in Nigerian public tertiary institutions on the utilization of AI in research and assessment practices, thereby contributing to the broader understanding of AI adoption in developing countries.

**Objectives of the Study**

Six key specific objectives guided this study. These are to:

1. Examine the lecturers' perceptions of Artificial Intelligence (AI) in research and assessment practices in public tertiary institutions in Zamfara State, Nigeria.
2. Find out the extent lecturers utilize AI tools in research and assessment practices in public tertiary institutions in Zamfara State, Nigeria.
3. Investigate the impact of AI tools on the quality and validity of research and assessment practices in public tertiary institutions in Zamfara State, Nigeria.
4. Determine the potential risks and limitations of relying on AI tools in research and assessment practices in Zamfara State, Nigeria.
5. Find out the challenges of utilizing AI tools in research and assessment practices in Zamfara State, Nigeria.
6. Investigate the role of institutions in promoting the adoption and effective use of AI tools in research and assessment practices in Zamfara State, Nigeria.

**Research Questions**

The following research questions guided the study:

1. What are the lecturers' perceptions of Artificial Intelligence (AI) in research and assessment practices in public tertiary institutions in Zamfara State, Nigeria?
2. To what extent do lecturers utilize AI tools in research and assessment practices in public tertiary institutions in Zamfara State, Nigeria?
3. How does the use of AI tools impact the quality and validity of research and assessment practices in public tertiary institutions in Zamfara State, Nigeria?
4. What are the potential risks of relying on AI tools in research and assessment practices in Zamfara State, Nigeria?
5. What are the challenges of utilizing AI tools in research and assessment practices in Zamfara State, Nigeria?
6. What role should institutions play in promoting the adoption and effective use of AI tools in research and assessment practices in Zamfara State, Nigeria?

**Methodology**

The descriptive survey design was adopted for the study. The population of the study comprised all the 954 academic staff in the three (3) Federal Government owned tertiary institutions in Zamfara State. Research Advisor served as the sampling frame to determine the sample size of the study. The sample size of 253 academic staff was selected using proportionate stratified random sampling technique. The instrument used for data collection is a researcher designed questionnaire termed “Perceptions and Utilization of Artificial Intelligence in Research and Assessment Practices Questionnaire (PUAIRAPQ)”. Both face and content validity of the instrument were established by three experts in Educational Research, Measurement and Evaluation. Thereafter, a pilot study was carried out to establish the reliability of the instrument. Cronbach Alpha method was used to determine the internal consistency of the instrument for data collection. A reliability index of .79 was obtained which shows that the instrument is reliable. The Google Survey Approach targeted at the participants was used to gather information from 253 participants. The Data collected were analyzed using Weighted Mean and Standard Deviation to answer the six (6) research questions.

**Results**

***Research Question one:*** *What are the lecturers' perceptions of Artificial Intelligence (AI) in research and assessment practices in public tertiary institutions in Zamfara State, Nigeria?*

**Table 1: Mean ratings of lecturers' perceptions of Artificial Intelligence (AI) in research and assessment practices**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SN | AI in research and assessment practices | N | Mean | Std. Deviation | Ranking |
| 1 | AI facilitate collaboration and knowledge-sharing among researchers | 253 | 2.9486 | .97250 | 5th |
| 2 | AI-powered assessment tools provide timely and constructive feedback | 253 | 3.1976 | .81191 | 3rd |
| 3 | AI enhances the validity and reliability of assessments | 253 | 2.8972 | .99867 | 7th |
| 4 | AI will significantly impact the future of research and assessment | 253 | 3.3557 | .69575 | 1st |
| 5 | AI tools streamline literature reviews, identifying relevant studies, patterns, and gaps | 253 | 3.3241 | .70549 | 2nd |
| 6 | AI-driven analytics uncover insights from large datasets through machine learning algorithms, data visualisation and data mining | 253 | 2.9249 | .98717 | 6th |
| 7 | AI-assisted tools optimise research design and methodology and improved research quality | 253 | 3.0356 | .90563 | 4th |

Field study 2025

Table 1 shows the mean and standard deviations of lecturers' perceptions of artificial intelligence (AI) in research and assessment practices in public tertiary institutions in Zamfara State. The table revealed the lecturers' perceptions of artificial intelligence (AI) in research and assessment practices as tools that impact future of research and assessment, streamline literature reviews, identifying relevant studies, patterns, and gaps, provide timely and constructive feedback curriculum-based assessments, optimise research design and methodology and improved research quality, facilitate collaboration and knowledge-sharing among researchers, uncover insights from large datasets through machine learning algorithms, data visualisation and data mining, and enhances the validity and reliability of assessments with mean values of 3.3557, 3.3241, 3.1976, 3.0356, 2.9486, 2.9249 and 2.8972 respectively.

***Research Question Two:*** *To what extent do lecturers utilize AI tools in research and assessment practices in public tertiary institutions in Zamfara State, Nigeria?*

**Table 2: Mean ratings of lecturers on the extent to which AI tools is utilized for research and assessment**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SN | AI tools use in research and assessment | N | Mean | Std. Deviation | Remark |
| 1 | Text analysis and data mining tools | 253 | 1.8498 | .99959 | LE |
| 2 | Data analysis and modelling tools | 253 | 1.8261 | .99273 | LE |
| 3 | Citation management tools | 253 | 2.1146 | .98615 | HE |
| 4 | Automated grading tools | 253 | 1.8656 | .99858 | LE |
| 5 | Plagiarism detection tools | 253 | 2.1794 | .98591 | HE |
| 6 | Feedback generation tools | 253 | 1.9684 | .98956 | LE |
| 7 | Virtual Research Assistants | 253 | 2.1530 | .98103 | HE |
|  | **Cluster Mean/Standard Deviation** |  | **1.9938** | **.99051** | **LE** |

Field study 2025

Table 2 shows that the extent lecturers utilize AI tools in research and assessment practices in public tertiary institutions in Zamfara State, Nigeria. A cluster mean of 1.9938 and standard deviations of .99051 was recorded. This implied that the extent lecturers utilize AI tools in research and assessment practices in public tertiary institutions in Zamfara State, Nigeria was to a low extent.

***Research Question Three:*** *How does the use of AI tools impact the quality and validity of research and assessment practices in public tertiary institutions in Zamfara State, Nigeria?*

**Table 3: Mean ratings of the impact of AI tools in the quality and validity of research and assessment practices**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SN | Impact of AI tools in the quality and validity of my research and assessment practices | N | Mean | Std. Deviation | Remark |
| 1 | AI tools have improved the accuracy of my research findings. | 253 | 3.2964 | .76834 | VHE |
| 2 | AI tools have enhanced the validity of my research results. | 253 | 3.3360 | .74120 | VHE |
| 3 | AI tools have improved the efficiency of my research process. | 253 | 3.3676 | .71496 | VHE |
| 4 | AI tools have enabled me to analyze larger datasets than I could previously. | 253 | 3.1897 | .81866 | VHE |
| 5 | AI tools have improved the fairness and consistency of my assessments. | 253 | 3.2174 | .78942 | VHE |
| 6 | AI tools have provided more detailed and constructive feedback to students. | 253 | 2.9249 | .98717 | HE |
| 7 | AI tools have reduced the time I spend on grading and assessment. | 253 | 3.0000 | .93435 | VHE |
| 8 | AI tools have enhanced the validity and reliability of my assessments. | 253 | 3.3320 | .74031 | VHE |
|  | **Cluster Mean/Standard Deviation** |  | **3.208** | **0.8118** | **VHE** |

Field study 2025

Table 3 shows the mean and standard deviations of the impact of AI tools on the quality and validity of research and assessment practices in public tertiary institutions in Zamfara State, Nigeria. The table revealed a cluster mean of 3.208 and standard deviation of 0.8118. This implied that AI tools impacted the quality and validity of research and assessment practices in public tertiary institutions in Zamfara State, Nigeria was to a very high extent.

***Research Question Four:*** *What are the potential risks of relying on AI tools in research and assessment practices in Zamfara State, Nigeria?*

**Table 4: Mean ratings of potential risks of relying on AI tools in research and assessment practices**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SN | Potential risks of relying on AI tools in research and assessment practices | N | Mean | Std. Deviation | Ranking |
| 1 | Loss of critical thinking skills in research as a result of over-reliance on AI tools | 253 | 3.2767 | .80827 | 2nd |
| 2 | AI tools create potential risks to data privacy | 253 | 3.1462 | .89883 | 6th |
| 3 | AI tools reduce the need for human judgment and expertise | 253 | 3.3478 | .66485 | 1st |
| 4 | AI tools compromise the security of sensitive research or assessment data | 253 | 3.1542 | .83331 | 5th |
| 5 | AI tools lack transparency in the decision-making processes | 253 | 3.0237 | .89942 | 7th |
| 6 | AI tools is difficult to hold accountable for errors or biases | 253 | 3.2609 | .81353 | 3rd |
| 7 | AI tools make assessment processes too formulaic and lacking in nuance | 253 | 3.1818 | .80582 | 4th |
|  |  |  |  |  |  |

Field study 2025

Table 4 shows the mean and standard deviations of potential risks and limitations of relying on AI tools in research and assessment practices in Zamfara State, Nigeria. The table revealed that AI tools reduce the need for human judgment and expertise, caused loss of critical thinking skills in research, difficult to hold accountable for errors or biases, make assessment processes too formulaic and lacking in nuance, compromise the security of sensitive research or assessment data, create potential risks to data privacy and lack transparency in the decision-making processes with mean values of 3.3478, 3.2767, 3.2609, 3.1818, 3.1542, 3.1462 and 3.0237 respectively.

***Research Question Five:*** *What are the challenges of utilizing AI tools in research and assessment practices, in Zamfara State, Nigeria?*

**Table 5: Mean ratings of challenges of utilizing AI tools in research and assessment practices**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SN | Challenges of utilizing AI tools in research and assessment practices | N | Mean | Std. Deviation | Ranking |
| 1 | Data privacy and security concerns on utilization AI tool | 253 | 3.0553 | .91553 | 7th |
| 2 | Limited consideration of local needs and priorities in AI tool development | 253 | 3.2292 | .78352 | 5th |
| 3 | Limited funding for AI tool development and implementation | 253 | 3.3913 | .66744 | 1st |
| 4 | Limited access to reliable internet connectivity hinders the use of AI tools | 253 | 3.2885 | .80656 | 2nd |
| 5 | Insufficient technological infrastructure (e.g., computers, software) limits AI tool utilization. | 253 | 3.2609 | .77353 | 3rd |
| 6 | Lack of technical support and maintenance hinders AI tool effectiveness | 253 | 3.1186 | .82722 | 6th |
| 7 | Limited training and capacity-building opportunities for researchers and educators | 253 | 3.2332 | .86658 | 4th |
|  |  |  |  |  |  |

Field study 2025

Table 5 shows the mean and standard deviations of the challenges of utilizing AI tools in research and assessment practices in Zamfara State, Nigeria. It revealed the challenges as limited funding for AI tool development and implementation, limited access to reliable internet connectivity, insufficient technological infrastructure (e.g., computers, software), limited training and capacity-building opportunities for researchers and educators, limited consideration of local needs and priorities in AI tool development, lack of technical support and maintenance and data privacy and security concerns with mean values of 3.3913, 3.2885, 3.2609, 3.2332, 3.2292, 3.1186 and 3.0553 respectively.

***Research Question Six:*** *What role should institutions play in promoting the adoption and effective use of AI tools in research and assessment practices in Zamfara State, Nigeria?*

**Table 6: Mean ratings of the institutions role in promoting the adoption and effective use of AI tools in research and assessment practices**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SN | Institutions’ role in promoting the adoption of AI tools in research and assessment practices | N | Mean | Std. Deviation | Ranking |
| 1 | Invested in the necessary infrastructure (e.g., hardware, software) for AI tool utilization. | 253 | 3.2727 | .78725 | 2nd |
| 2 | Policies and guidelines for the use of AI tools in research and assessment. | 253 | 3.1383 | .85949 | 3rd |
| 3 | Workshops and training programs to enhance researchers' and educators' skills in using AI tools. | 253 | 3.2964 | .81349 | 1st |
| 4 | Encourages collaboration and knowledge-sharing among researchers and educators on AI tool utilization. | 253 | 3.0040 | .91936 | 5th |
| 5 | Provides opportunities for researchers and educators to stay up-to-date with the latest developments in AI. | 253 | 3.0870 | .88211 | 4th |
| 6 | Recognizes and rewards researchers and educators who use AI tools effectively. | 253 | 2.8735 | 1.01174 | 8th |
| 7 | Encourages innovation and experimentation with AI tools in research and assessment. | 253 | 2.8775 | .95784 | 7th |
| 8 | Provides incentives for researchers and educators to adopt AI tools in their work. | 253 | 2.8893 | 1.00574 | 6th |
|  |  |  |  |  |  |

Field study 2025

Table 6 shows the mean and standard deviations of the role of institutions in promoting the adoption and effective use of AI tools in research and assessment practices in Zamfara State, Nigeria. It revealed that the institution should organize workshops and training on using AI tools, invested in the necessary infrastructure, implement policies and guidelines for the use of AI tools, provide up-to-date on the latest developments in AI, encourages collaboration and knowledge-sharing among researchers and educators, provides incentives for researchers and educators to adopt AI tools in their work, encourages innovation and experimentation with AI tools in research and assessment and recognizes and rewards researchers and educators who use AI tools effectively with mean values of 3.2964, 3.2727, 3.1383, 3.0870, 3.0040, 2.8893, 2.8775 and 2.8735 respectively..

**Discussion of Findings**

Based on the data collected and work done on the analysis of result, the findings of the study revealed that the lecturers' perceptions of Artificial Intelligence (AI) in research and assessment practices as tools that impact future of research and assessment, streamline literature reviews, identifying relevant studies, patterns, and gaps, provide timely and constructive feedback curriculum-based assessments, optimize research design and methodology and improved research quality, facilitate collaboration and knowledge-sharing among researchers, uncover insights from large datasets through machine learning algorithms, data visualization and data mining, and enhances the validity and reliability of assessments. This study is supported by Ibrahim (2025) stated that AI plays a vital role in conducting research, transforming various aspects of research phases: Such asLiterature Review: AI-assisted literature analysis and summarization;Hypothesis Generation AI-driven formation and testing hypothesis;Data Collection: AI-powered data collection tools and survey analysis; Data Analysis: AI-driven statistical analysis, visualisation, and modelling, and Result Interpretation: AI-assisted result interpretation and recommendation.

Findings from the study also showed that lecturers utilize AI tools in research and assessment practices in public tertiary institutions in Zamfara State, Nigeria to a low extent. The result is consistence with Ukeh & Anih (2024) reported that the utilization of artificial intelligence based tools for teaching among lecturers in Federal University Otuoke, Bayelsa State was very low. The finding of the study also in line with Thomas & Gambari (2021), who reported that the utilization of artificial intelligence tools for teaching is in a very low level.

The findings also revealed that AI tools impacted the quality and validity of research and assessment practices in public tertiary institutions in Zamfara State, Nigeria was to a very high extent. This study is in consonance with the belief of Ahmed (2024) who expressed that AI technology enhances the quality of teaching, learning, assessment and research in schools.

The findings of the study also revealed potential risks of relying on AI tools in research and assessment practices as reduction in the need for human judgment and expertise, loss of critical thinking skills in research, difficult to hold accountable for errors or biases, make assessment processes too formulaic and lacking in nuance, compromise the security of sensitive research or assessment data, create potential risks to data privacy and lack transparency in the decision-making processes. This study is supported by Bañez et al. (2024) who express strong concerns that generative AI has fundamentally altered higher education assessment, making it challenging to accurately verify students’ learning. Also in line with Corbin et al. (2025) who raised caution against over-relying on AI detection services due to their limited accuracy, and suggestions have been made to modify assignments to emphasize interactive feedback and revision, as well as to design assessments that are inherently difficult for AI to complete.

Findings from the study also showed the challenges of utilizing AI in research and assessment practices as limited funding for AI tool development and implementation, limited access to reliable internet connectivity, insufficient technological infrastructure (e.g., computers, software), limited training and capacity-building opportunities for researchers and educators, limited consideration of local needs and priorities in AI tool development, lack of technical support and maintenance and data privacy and security concerns. The result is consistence with the statement of Sarfo et al., (2024) who identified inadequate infrastructure, insufficient training and support, lecturers' attitudes and concerns about ethical implications further complicate the landscape of AI integration in Nigeria. Also in line with Miller (2019) who revealed shortage of AI experts, high costs of AI software and hardware, and ethical concerns regarding the use of AI in sensitive research areas as significant barriers to AI adoption in research and assessment practices.

The findings also revealed the role of institutions in promoting the adoption and effective use of AI tools in research and assessment practices as to organize workshops and training on using AI tools, invested in the necessary infrastructure, implement policies and guidelines for the use of AI tools, provide up-to-date on the latest developments in AI, encourages collaboration and knowledge-sharing among researchers and educators, provides incentives for researchers and educators to adopt AI tools in their work, encourages innovation and experimentation with AI tools in research and assessment and recognizes and rewards researchers and educators who use AI tools effectively.  
**Conclusion**

Based on the findings of the study, it was concluded that lecturers perceived Artificial Intelligence (AI) as tools that optimize research design and methodology, improved research quality. and enhances the validity and reliability of assessments. The study also concluded low utilization of AI tools in research and assessment practices among lecturers of public tertiary institutions in Zamfara State. Meanwhile, the AI tools used impacted the quality and validity of research and assessment practices. It was further concluded that the reduction in the need for human judgment and expertise, and loss of critical thinking skills in research were also identified as potential risks of relying on AI tools in research and assessment practices, while limited funding for AI tools development, limited access to reliable internet connectivity and insufficient technological infrastructure are the challenges of utilizing AI in research and assessment practices among lecturers of public tertiary institutions in Zamfara State, Nigeria.

**Recommendations**

The study therefore recommended that:

1. Further efforts and initiatives should be made by the institutions in Zamfara State to promote the effective implementation of AI tools in research and assessment.
2. Workshops should be organized by the institutions in Zamfara State in order to create awareness of the importance and potential risks of relying on AI tools in research and assessment practices among lecturers.
3. Institutions in Zamfara State should allocate more funds for AI infrastructure and research, develop policies addressing AI-driven research ethics, and establish guidelines for AI-driven data management.
4. Institutions in Zamfara State should also foster collaboration and Networking among lecturers of various disciplines. Collaboration can inspire innovative approaches to integrating AI in research and assessment practices.

**Consent**

As per international standards or university standards, Participants’ written consent has been collected and preserved by the author(s).

**Disclaimer (Artificial intelligence)**

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

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