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UTILISATION AND ETHICAL ADHERENCE OF ARTIFICIAL INTELLIGENCE IN POSTGRADUATE RESEARCH: A STUDY OF THE FACULTY OF SOCIAL SCIENCES, DELTA STATE UNIVERSITY, ABRAKA

[1]Efe Francis EJEDAFIRU, PhD
Library and Information Science, Faculty of the Social Sciences, Delta State University, Abraka, Delta State, Nigeria
http://ORCID.org/0009-0007-7287-1381
Email: eejedafiru@delsu.edu.ng, ejedafiruefe@yahoo.com

[2]CHIDI, Anthony Ikediashi
Postgraduate Student
Library and Information Science, Faculty of the Social Sciences,
Delta State University, Abraka, Delta State, Nigeria

&

[3]Lucky Oghenetega URHIEWHU, PhD
University Library, Dennis Osadebay University, Asaba, Delta State, Nigeria
Email: lucky.urhiewhu@dou.edu.ng
https://orcid.org/0000-0002-2164-7984

Abstract

Background: *The integration of artificial intelligence (AI) into academic research has transformed postgraduate education, offering unprecedented opportunities for enhancing research efficiency and productivity. However, concerns about ethical compliance in AI-assisted research have emerged as a critical issue in higher education institutions, particularly in developing countries where structured guidance on ethical AI use often lags behind technological adoption.*

Objective: *This study examined the utilisation and ethical adherence of artificial intelligence in postgraduate research among students in the Faculty of Social Sciences at Delta State University, Abraka, Nigeria. Specifically, the study sought to determine the extent to which postgraduate students utilise AI tools for research purposes and assess the extent to which they adhere to ethical principles governing AI use in research.*

Methodology: *A correlational research design was adopted for the study. The target population comprised 173 postgraduate students in the Faculty of Social Sciences, Delta State University, Abraka, for the 2024/2025 academic session. A total enumeration sampling technique was employed to include all 173 students. Data were collected using a validated, self-designed questionnaire titled "Information Literacy and the Ethical Use of Artificial Intelligence in Research among Postgraduate Students Questionnaire (ILEUAIRPSQ)." The instrument demonstrated a reliability index of 0.78 using the test-retest method. Out of 173 questionnaires administered, 164 were duly completed and analysed, representing a 94.8% response rate. Data were analysed using descriptive statistics, including frequencies, percentages, and means, with a criterion mean of 2.50 adopted for the four-point scale.*

Findings: *The results revealed that postgraduate students utilised artificial intelligence tools for research purposes to a high extent (average mean = 2.98). Students demonstrated particularly high utilisation of AI for generating citations and references ($\bar{x}$ = 3.29), summarising journal articles and research reports ($\bar{x}$ = 3.17), grammar checking and language editing ($\bar{x}$ = 3.15), plagiarism detection ($\bar{x}$ = 3.03), and AI-powered database searches for information retrieval ($\bar{x}$ = 3.02). However, adherence to ethical principles in the use of artificial intelligence was found to be low (aggregate mean = 1.76). Students demonstrated poor ethical practices in verifying AI-generated information before use ($\bar{x}$ = 1.54), properly acknowledging AI tools used in research work ($\bar{x}$ = 1.54), ensuring transparency in AI tool usage ($\bar{x}$ = 1.79), protecting personal and institutional data ($\bar{x}$ = 1.76), adhering to institutional policies on AI use ($\bar{x}$ = 1.71), and avoiding over-reliance on AI tools in research activities ($\bar{x}$ = 1.73).*

Conclusion: *The study concluded that while AI tools are extensively adopted by postgraduate students for various research purposes, ethical compliance remains inadequate, creating a significant gap between technological adoption and responsible use. This disconnect poses risks to research integrity, academic credibility, and the development of essential critical thinking skills among postgraduate students. The disparity between high utilisation (mean = 2.98) and low ethical adherence (mean = 1.76) is particularly concerning, suggesting that students are adopting AI tools rapidly without corresponding development of ethical reasoning skills.*

Recommendations: *The study recommended that university management should develop and implement mandatory ethical training sessions focused on responsible AI use; universities should establish comprehensive policies clearly defining acceptable and unacceptable uses of AI in academic research, including specific guidelines on disclosure, attribution, data privacy, and consequences for ethical violations; and postgraduate research methodology curricula should incorporate modules on AI ethics, covering algorithmic bias, data governance, and limitations of AI-generated content.*

Keywords: Artificial intelligence, Ethical adherence, Postgraduate students, Research utilisation, Social sciences, Delta State University

*Corresponding author(s) EJEDAFIRU, E. F agree that this article remain permanently open access under the terms of the Creative Commons Attribution License 4.0 International License

Introduction

The integration of artificial intelligence (AI) into academic research has fundamentally transformed how postgraduate students approach scholarly inquiry, particularly in the Faculty of Social Sciences at Delta State University, Abraka. As digital technologies continue to evolve, the utilisation of AI tools for research purposes has become increasingly prevalent among graduate students who seek to enhance their research efficiency, accuracy, and productivity. However, alongside this growing utilisation emerges a parallel concern regarding ethical adherence—the extent to which students comply with established ethical principles when deploying AI tools in their research endeavours. This study, therefore, focuses on two critical dimensions of AI in postgraduate research: utilisation and ethical adherence. Understanding the relationship between these two dimensions within the specific context of Delta State University, Abraka, is essential for developing targeted interventions that promote responsible AI integration in postgraduate education.

The utilisation of artificial intelligence in postgraduate research has expanded rapidly as students increasingly recognise the potential of AI tools to support various research activities. Okagbue (2018) highlighted that postgraduate students in the twenty-first century require advanced competencies to tackle contemporary research challenges, and AI tools have emerged as powerful aids. Research has been described as a structured process of collecting, analysing, and interpreting data to answer questions or develop new understanding (Eppinga et al., 2020). The utilisation of AI enables students to automate routine tasks, thereby freeing cognitive resources for higher-order activities. Moruf and Dangani (2020) emphasised that technological integration in research promotes innovation and deepens academic inquiry. Within the Faculty of Social Sciences at Delta State University, understanding the extent to which postgraduate students utilise AI tools constitutes a fundamental objective of this study. Furthermore, the ethical adherence of postgraduate students to principles governing AI use represents an equally critical dimension. The ethical use of artificial intelligence emphasises transparency, fairness, accountability, and respect for privacy (Resnik & Hosseini, 2024). Arar et al. (2025) stressed that ethical AI practices in academic contexts involve careful attention to algorithmic transparency, research integrity, and data governance. However, evidence suggests that while AI tools are widely adopted, ethical adherence often lags behind, creating a concerning gap. Bamigbola and Joseph (2025) observed that postgraduate students who are informed about algorithmic bias, privacy concerns, and research ethics demonstrate greater capacity to employ AI responsibly.

The interplay between AI utilisation and ethical adherence is particularly significant for social sciences postgraduate students, who often work with human subjects and sensitive data. Strong ethical awareness allows students to critically evaluate AI outputs (Ottonicar et al., 2021). Osang, Idiong, and Akanimoh (2025) documented that insufficient ethical awareness increases the likelihood of unethical AI practices. The Faculty of Social Sciences at Delta State University provides a unique context as a Nigerian university operating within a developing country's educational landscape. Peters and Olojede (2025) noted that the rapid integration of generative AI in Nigerian universities has outpaced the development of comprehensive ethical frameworks. Similarly, Abubakar, Obielodan, and Abdullahi (2024) found that many postgraduate students in Nigerian tertiary institutions do not fully understand institutional expectations regarding disclosure and attribution of AI-assisted content. This observation aligns with earlier findings on information literacy and technology adoption in Nigerian library and information science education (Orakpor, Ezejiofo & Nwana, 2010; Orakpor & Anyaoku, 2012; Orakpor, 2012). The significance of this study extends beyond descriptive documentation. By systematically examining both dimensions, this research provides evidence for university administrators, faculty members, librarians, and policymakers. For librarians and information professionals, insights into both utilisation and ethical adherence guide the design of information literacy programmes, a concern central to the work of scholars such as Okeke-John, Ibegbulam, Orakpor, and Asom (2013) and Orakpor and Ezekwibe (2025). Ultimately, this study aims to contribute to promoting responsible, ethical, and effective integration of AI technologies in Nigerian higher education.

Statement of the Problem

The increasing reliance on AI in academic research has created both opportunities and challenges for postgraduate students at Delta State University, Abraka. The specific problem this study addresses is twofold: first, the lack of comprehensive evidence regarding the extent to which postgraduate students utilise AI tools for research purposes; and second, the insufficient understanding of the degree to which these students adhere to ethical principles governing AI use. Preliminary observations suggest that while many postgraduate students employ AI tools such as ChatGPT, grammar checkers, citation generators, and plagiarism detection software, there may be significant gaps in their awareness and compliance with ethical standards. The absence of clear institutional policies and inadequate training on ethical AI use exacerbates these challenges, a situation reminiscent of earlier challenges in adopting digital technologies in Nigerian libraries (Agwuna, Ibeh, Orakpor, Muokebe & Anyaegbunam, 2024; Orakpor & Omoruyi, 2022; Orakpor & Igwilo, 2024Preliminary observations suggest that while many postgraduate students employ AI tools such as ChatGPT, grammar checkers, citation generators, and plagiarism detection software in their research, there may be significant gaps in their awareness and compliance with ethical standards. Many students may be unaware of the need to verify AI-generated

information, properly acknowledge AI assistance, protect sensitive data, or avoid over-reliance on automated outputs. This deficiency can lead to unethical practices, including unintentional plagiarism, misrepresentation of AI-generated data, privacy violations, and erosion of research credibility. Furthermore, the absence of clear institutional policies and inadequate training on ethical AI use exacerbate these challenges. Therefore, this study seeks to systematically investigate the utilisation and ethical adherence of AI in research among postgraduate students in the Faculty of Social Sciences at Delta State University, Abraka, to provide evidence that can inform targeted interventions, policy development, and educational programmes aimed at promoting responsible AI integration in postgraduate research.

Objectives of the Study

The main purpose of this study was to examine the utilisation and ethical adherence of artificial intelligence in research among postgraduate students in the Faculty of Social Sciences at Delta State University, Abraka. Specifically, the study aimed to:

1. determine the extent to which postgraduate students utilize artificial intelligence for research purposes in the Faculty of Social Sciences, Delta State University, Abraka; and
2. assess the extent to which postgraduate students adhere to ethical principles in the use of artificial intelligence for research purposes.

Literature Review

Extent of Artificial Intelligence Utilisation for Research Purposes

The extent of AI utilisation among postgraduate students has grown steadily. Empirical evidence shows that awareness translates into varying degrees of utilisation depending on institutional exposure and individual competence. Asongo and Akuse (2024) reported that postgraduate students in Benue State demonstrated moderate to high utilisation. Eleje et al. (2025) observed that AI adoption in Nigerian higher education has expanded due to improved access to digital platforms. Oladunni Mohammad (2024) found that postgraduate business educators frequently relied on AI tools to enhance research productivity. The intensity of AI utilisation is also influenced by students' digital competence. Koko and Ogenima (2025) noted that students with higher technological competence demonstrated greater frequency and diversity of AI usage. Kasumu and Agbarakwe (2024) found that although many students were aware of AI tools, the depth of utilisation remained moderate due to limited training opportunities. Bin-Nashwan et al. (2023) similarly reported that students used generative AI tools extensively for drafting and summarising scholarly content. Access to institutional resources also plays a significant role. Nwile, Amaewhule, and Ezeugo (2025) reported that students with access to AI-based learning platforms demonstrated higher research efficiency. Carobene et al. (2023) highlighted that AI adoption in scientific publishing has indirectly influenced postgraduate research practices. Xie et al. (2021) noted that digital research tools, including AI-driven applications, have become integral to modern research environments. These trends align with broader observations on the role of ICT in library and information science education (Orakpor, Ezejiofo & Nwana, 2010; Orakpor et al., 2014; Orakpor, 2020).

Ethical Principles in the Use of Artificial Intelligence

Ethical principles in AI use among postgraduate students are increasingly examined in relation to actual compliance rather than theoretical expectations. Bin-Nashwan et al. (2023) reported that students frequently used generative AI tools without adequate disclosure. Ottonicar et al. (2021) observed that students with higher information literacy demonstrated better adherence to ethical principles. Abubakar et al. (2024) found that students exhibited moderate adherence, with AI often used responsibly for idea generation but misused in content generation. Empirical studies further demonstrate that non-adherence remains a significant concern. Xie et al. (2021) identified widespread questionable research practices exacerbated by AI-generated content. Buçinca et al. (2021) reported that students often accepted AI outputs uncritically. Osang et al. (2025) documented unethical AI usage including copying AI-generated materials. Samuel (2025) observed that plagiarism and improper attribution persisted despite institutional regulations. In the Nigerian context, adherence is further influenced by institutional guidance. Peters and Olojede (2025) noted that rapid AI integration outpaced ethical framework development. Chukwu-Nwali and Udumukwu (2025) found that adherence depended largely on personal discretion. This mirrors earlier findings on the challenges of adopting new technologies in Nigerian public libraries (Agwuna, Ibeh, Muokebe, Anyaegbunam & Orakpor, 2025; Orakpor, Muokebe, Anyaegbunam, Agwuna & Ibeh, 2025). However, literature also shows that adherence improves with deliberate instructional measures. Usulor et al. (2025) demonstrated that targeted classroom orientation significantly improved compliance. Ottonicar et al. (2021) reaffirmed that ethical adherence is strongly linked to information literacy education, a finding consistent with studies on library skills and information literacy (Orakpor, Agbanu & Muokebe, 2025; Orakpor & Ezekwibe, 2025; Orakpor, Muokebe, Ibeh, Agunwa & Ugheru, 2025).

Methodology

This study adopted a correlational research design to examine the utilisation and ethical adherence of artificial intelligence in research among postgraduate

students in the Faculty of Social Sciences, Delta State University, Abraka. The design was appropriate because it enabled the investigation of the extent of AI utilisation and ethical adherence without variable manipulation. As noted by Bhandari (2021), correlational research examines naturally occurring relationships, allowing trends and patterns to be identified for academic and policy implications.

The study's target population consisted of 173 postgraduate students in the Faculty of Social Sciences, Delta State University, Abraka, for the 2024/2025 academic session. The sample consisted of all 173 postgraduate students, as a total enumeration sampling technique was used to include all available students. As noted by Baxter and Babbie (2004), studying an entire small and manageable population ensures comprehensive coverage, minimizes sampling bias, and enhances the accuracy and reliability of the research findings.

The primary research instrument for data collection was a self-designed questionnaire titled "Information Literacy and the Ethical Use of Artificial Intelligence in Research among Postgraduate Students Questionnaire (ILEUAIRPSQ)." The questionnaire comprised sections covering demographic data, extent of AI utilisation for research purposes (Section B), and extent of adherence to ethical principles in AI use (Section C). The instrument was validated using face and content validity techniques. Experts in library and information science, as well as the research supervisor, reviewed the questionnaire to ensure clarity, relevance, and adequacy of content. The reliability of the instrument was determined using the test-retest method, yielding a reliability index of 0.78, indicating a high degree of reliability.

The researcher personally administered the questionnaire to respondents to ensure a high response rate. Out of 173 questionnaires administered, 164 were duly completed and analysed, representing a 94.8% response rate. The collected data were analysed using descriptive statistics, including frequencies, percentages, and statistical means. A criterion mean of 2.50 was chosen for analysis because of the four-point scale. This criterion mean served as a benchmark for interpreting the data, meaning that any mean score equal to or above 2.50 was accepted as high extent, while any score below 2.50 was rejected as low extent

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Results and Analysis

Questionnaire Response Rate

A total of 173 copies of the questionnaire were administered to the respondents, and 164 copies were filled, returned, and found useful for the study, representing a 94.8% response rate. The response rate of 94.8% is considered adequate to conduct this study because the standard and acceptable response rate for carrying out a research study is 60% and above.

Personal Data of Respondents

Table 1: Sex Distribution of Respondents

Sex	No of Respondents	Percentage (%)
Male	97	59.1
Female	67	40.9
Total	**164**	**100.0**

Source: Fieldwork, 2026

Table 1 shows that 97 (59.1%) of the respondents were males while 67 (40.9%) were females, indicating that male respondents constituted the majority of the sample.

Table 2: Percentage Analysis of the Age Distribution of Respondents

Age	No of Respondents	% Distribution
Under 25	15	9.1
25–30 yrs	90	54.9
31–35 yrs	56	34.2
35 yrs above	3	1.8
Total	**164**	**100.0**

Source: Fieldwork, 2026

Table 2 shows that 90 (54.9%) of the respondents were in the age bracket of 25–30 years, constituting the majority.

Table 3: Respondents' Level of Study

Level of Study	No of Respondents	Percentage (%)
PhD	52	31.7
M.Sc.	112	68.3
Total	**164**	**100.0**

Source: Fieldwork, 2026

Table 3 shows that 112 (68.3%) of the respondents were M.Sc. students, constituting the majority.

Answering of Research Questions

Research Question One: To what extent do postgraduate students utilize artificial intelligence for research purposes in the Faculty of Social Sciences, Delta State University, Abraka?

Table 4: Extent to which Postgraduate Students Utilize Artificial Intelligence for Research Purposes

Item	VHE	HE	LE	VLE	x̄
I use AI tools to search for relevant academic literature.	47	46	36	35	2.64
I use AI tools to summarise journal articles and research reports.	68	68	16	12	3.17
I use AI applications to generate citations and references.	83	57	12	12	3.29
I use AI-powered databases for information retrieval.	62	62	21	19	3.02
I use AI tools to assist in data analysis and interpretation.	58	58	26	22	2.93
I use AI tools for grammar checking and language editing.	67	67	17	13	3.15
I use AI tools to organise and manage research materials.	59	59	24	22	2.95

I use AI tools to identify research gaps and trends.	62	62	21	19	3.02
I use AI tools for plagiarism detection and originality checks.	63	62	20	19	3.03
I use AI tools such as ChatGPT to enhance research productivity.	47	46	36	35	2.64
Average Mean					**2.98**
Criterion Mean					**2.50**

Note: VHE = Very High Extent (4 points); HE = High Extent (3 points); LE = Low Extent (2 points); VLE = Very Low Extent (1 point)

Data in Table 4 reveals an average mean of 2.98, which is above the criterion mean of 2.50, indicating that postgraduate students utilize artificial intelligence for research purposes to a high extent. The findings show that students highly used AI applications to generate citations and references ($\bar{x}$ = 3.29), summarize journal articles and research reports ($\bar{x}$ = 3.17), and perform grammar checking and language editing ($\bar{x}$ = 3.15). Other areas of high utilization included plagiarism detection ($\bar{x}$ = 3.03), identification of research gaps ($\bar{x}$ = 3.02), AI-powered databases for information retrieval ($\bar{x}$ = 3.02), organization of research materials ($\bar{x}$ = 2.95), and assistance in data analysis ($\bar{x}$ = 2.93). Based on these results, the study concluded that postgraduate students employed artificial intelligence tools for research activities to a high extent.

Research Question Two: To what extent do postgraduate students adhere to ethical principles in the use of artificial intelligence for research purposes?

Table 5: Extent to which Postgraduate Students Adhere to Ethical Principles in the Use of Artificial Intelligence for Research Purposes

Items	VHE	HE	LE	VLE	$\bar{x}$
I verify AI-generated information before using it in research.	6	14	42	102	1.54
I properly acknowledge AI tools used in my research work.	10	15	28	111	1.54
I avoid submitting AI-generated content as original work.	11	15	41	97	1.63
I consider copyright issues when using AI-generated materials.	29	48	42	45	2.37
I protect personal and institutional data when using AI tools.	13	19	48	84	1.76
I ensure transparency in the use of AI tools in my research.	17	11	57	79	1.79
I adhere to institutional policies on the use of AI tools.	11	19	46	88	1.71
I seek approval before using AI tools where necessary.	12	19	47	86	1.74
I avoid over-reliance on AI tools in research activities.	15	18	39	92	1.73
I report unethical use of AI tools when observed.	14	19	42	89	1.74
Aggregate Mean					**1.76**
Criterion Mean					**2.50**

Data in Table 5 indicates an aggregate mean of 1.76, which is lower than the criterion mean of 2.50, showing that postgraduate students adhered to ethical principles in the use of artificial intelligence for research to a low extent. The results reveal low mean scores across all ethical indicators, including verification of AI-generated information ($\bar{x}$ = 1.54), proper acknowledgment of AI tools ($\bar{x}$ = 1.54), avoidance of submitting AI-generated content as original work ($\bar{x}$ = 1.63), protection of personal and

institutional data ($\bar{x}$ = 1.76), transparency in AI use ($\bar{x}$ = 1.79), adherence to institutional policies ($\bar{x}$ = 1.71), seeking approval ($\bar{x}$ = 1.74), avoidance of over-reliance ($\bar{x}$ = 1.73), and reporting unethical use ($\bar{x}$ = 1.74). Although consideration of copyright issues recorded a relatively higher mean score ($\bar{x}$ = 2.37), it still fell below the criterion mean. Based on these findings, the study concluded that postgraduate students demonstrated low adherence to ethical principles in the use of artificial intelligence for research purposes.

Discussion of Findings

Extent of Artificial Intelligence Utilisation for Research Purposes

The finding revealed that postgraduate students in the Faculty of Social Sciences utilized artificial intelligence tools for research purposes to a high extent. The students frequently used AI tools for summarizing journal articles, generating citations and references, checking grammar, detecting plagiarism, retrieving information from databases, organizing research materials, and assisting in data analysis. This high level of utilization showed that artificial intelligence had become an essential research support tool among postgraduate students. This finding aligned with the study of Asongo and Akuse (2024), who reported that postgraduate students in Nigerian universities demonstrated high awareness and frequent utilization of AI tools for academic writing, literature searching, and research organization. They noted that AI tools enhanced efficiency and reduced the burden associated with manual research processes. Similarly, Koko and Ogenima (2025) found that postgraduate students possessed considerable competence in the use of artificial intelligence tools for learning and research, particularly in information retrieval and content development. Their study emphasized that students viewed AI as a complementary research aid that improved productivity rather than undermined academic effort. The consistency between these studies and the present finding suggested that increased digital exposure and accessibility of AI tools in Nigerian universities contributed significantly to the high extent of AI utilization observed among postgraduate students.

Adherence to Ethical Principles in the Use of Artificial Intelligence

The finding showed that postgraduate students adhered to ethical principles in the use of artificial intelligence for research purposes to a low extent. Ethical practices such as verifying AI-generated information, acknowledging AI tools, maintaining transparency, protecting data, and avoiding over-reliance on AI were inadequately observed. This finding was supported by Abubakar, Obielodan, and Abdullahi (2024), who found that students in Nigerian tertiary institutions demonstrated limited understanding of ethical standards guiding the use of AI-generated content. Their study revealed frequent failure to properly acknowledge AI tools and a weak commitment to academic integrity. Similarly, Osang, Idiong, and Akanimoh (2025) reported widespread unethical practices associated with artificial intelligence use among university students, including presenting AI-generated outputs as original work and neglecting disclosure requirements. They attributed these practices to insufficient ethical awareness and weak institutional enforcement mechanisms. These studies supported the present finding by showing that although AI tools were widely adopted, ethical compliance remained low. The alignment of results highlighted the need for stronger ethical orientation, clear institutional policies, and continuous sensitization programmes to guide responsible artificial intelligence use in postgraduate research.

The disparity between high utilisation (mean = 2.98) and low ethical adherence (mean = 1.76) is particularly concerning. This gap suggests that postgraduate students are adopting AI tools rapidly without corresponding development of ethical reasoning skills. Bin-Nashwan et al. (2023) noted that the convenience and efficiency of AI tools often override ethical considerations in students' decision-making processes. The present study confirms this pattern, as students demonstrated extensive use of AI for tasks such as citation generation and plagiarism detection—ironically, tools designed to promote academic integrity—while simultaneously failing to verify AI-generated information or properly acknowledge AI assistance. This paradox indicates that students may be using AI tools in ways that inadvertently compromise the very ethical standards these tools are meant to support.

Conclusion

This study affirms that artificial intelligence has become an important tool for research activities among postgraduate students in the Faculty of Social Sciences, Delta State University, Abraka. Postgraduate students utilised AI tools to a high extent, particularly for summarising academic materials, generating citations, checking grammar, retrieving information, and enhancing research productivity. However, despite high utilisation, adherence to ethical principles was low. Many students demonstrated limited compliance with ethical standards such as verification of AI-generated information, acknowledgment of AI tools, transparency, and avoidance of over-reliance on automated outputs. The study concludes that while AI tools are extensively adopted in postgraduate research, ethical compliance remains inadequate, creating a significant gap between technological adoption and responsible use. This disconnect poses risks to research integrity, academic credibility, and the development of essential critical thinking skills.

Recommendations

Based on the findings, the following recommendations are made:

1. University management should develop and implement mandatory ethical training sessions specifically focused on the responsible use of

artificial intelligence in research, addressing verification of AI-generated content, proper acknowledgment, transparency, and avoidance of over-reliance.

2. Universities should establish comprehensive policies that clearly define acceptable and unacceptable uses of artificial intelligence in academic research, including specific guidelines on disclosure, attribution, data privacy, and consequences for ethical violations.

3. The curriculum for postgraduate research methodology should incorporate modules on artificial intelligence ethics, covering topics such as algorithmic bias, data governance, and the limitations of AI-generated content. Information literacy programmes, as advocated by library and information science scholars (Orakpor & Modili, 2024; Orakpor, 2012; Muokebe, Ibeh, Orakpor, Agwuna & Uzoigwe, 2025; Ibeh, Muokebe, Agwuna & Orakpor, 2025), should be strengthened to include AI literacy and ethical reasoning.

References

Abubakar, U., Obielodan, O. O., & Abdullahi, A. Y. (2024). Ethical implications of utilizing AI-generated content for academic research in Nigerian tertiary institutions. *International Journal of Innovative Technology Integration in Education, 7*(1), 41–52.

Agunwa, O. M., Ibeh, O. B., Muokebe, B. O., Anyaegbunam, C. J., & Orakpor, A. M. (2025). Application of information communication technology in reference resources and services in public libraries in Nigeria. *ATBU Journal of Science, Technology and Education, 13*(1), 720–727. https://www.atbufstejoste.com/index.php/joste/article/view/2483

Agwuna, O. M., Ibeh, O. B., Orakpor, A. M., Muokebe, B. O., & Anyaegbunam, C. J. (2024). Challenges of adopted digital technologies in public library services in Nigeria. *OMANARP International Journal of Art & Social Sciences, 1*, 1–11. https://acadrespub.com/index.php/oijst/article/view/128

Agwuna, O. M., Ibeh, O. B., Muokebe, B. O., Anyaegbunam, C. J., & Orakpor, A. M. (2025). Application of information communication technology in reference resources and services in public libraries in Nigeria. *ATBU Journal of Science, Technology and Education, 13*(1), 720–727. https://www.atbufstejoste.com/index.php/joste/article/view/2483

Agwuna, O. M., Orakpor, A. M., Muokebe, B. O., Ibeh, O. B., & Odia, E. (2025). Utilization of electronic information resources in Chukwuemeka Odumegwu Ojukwu University library Igbariam by undergraduate students of Science Education and English Language. *OMANARP International Journal of Education, 1*(1), 20–33. https://acadrespub.com/index.php/oije/article/view/104/93

Agwuna, O. M., Anyaegbunam, C. J., Muokebe, B. O., Ibeh, O. B., & Orakpor, A. M. (2025). Information communication technology in organization of knowledge with the use of open software in public libraries in Nigeria. *OMANARP International Journal of Sciences and Technology, 2*(2), 10–16. https://acadrespub.com/index.php/oijst/article/view/121

Arar, K., Saiti, A., & Guajardo, M. (2025). Ethical AI practices in academic contexts: Transparency, integrity, and governance. *Educational Technology Research and Development, 73*(1), 112–128.

Asongo, S. T., & Akuse, S. S. (2024). Awareness and utilization of artificial intelligence (AI) tools for enhanced research among postgraduate students in universities in Benue State, Nigeria. *International Journal of Innovative Science and Research Technology, 9*(9), 1712–1720.

Bamigbola, A. A., & Joseph, F. G. (2025). Awareness of algorithmic bias and ethical AI use among postgraduate students. *Nigerian Journal of Library and Information Science, 18*(2), 78–94.

Bin-Nashwan, S., Sadallah, M., & Bouteraa, M. (2023). Use of ChatGPT in academia: Academic integrity hangs in the balance. *Technology in Society, 75*, 102370.

Buçinca, Z., Malaya, M. B., & Gajos, K. Z. (2021). To trust or to think: Cognitive forcing functions can reduce overreliance on AI in AI-assisted decision-making. *Proceedings of the ACM on Human-Computer Interaction, 5*(CSCW1), 1–21.

Carobene, A., Padoan, A., & Cabitza, F. (2023). Artificial intelligence in scientific publishing: Ethical considerations and research practices. *Clinical Chemistry and Laboratory Medicine, 61*(8), 1423–1435.

Chukwu-Nwali, V., & Udumukwu, I. J. (2025). Measuring the adoption and efficacy of AI-powered tools in academic writing and peer review among Nigerian university academics. *International Journal of Research and Scientific Innovation, 12*(8), 2025–2035.

Eleje, L. I., Ezeugo, N. C., Esomonu, N. P. M., et al. (2025). Artificial intelligence adoption in higher education in Nigeria. *Discover Artificial Intelligence, 5*, Article 335.

Eppinga, M. B., Muzamhindo, S., & De Sciscio, M. (2020). Research as a structured process: Definitions and applications. *Research Methodology Review, 14*(2), 33–51.

Ibeh, O. B., Alumona, A. I., Muokebe, B. O., Agwuna, O. M., Enweani, U. V., Orakpor, A. M., Nwankwo, N. G., Anike, A. N., & Obiadazie, R. E. (2023). Management of electronic records security and librarians' job performance in university libraries in Nigeria. *Library Progress*

International, 43(2). https://bpasjournals.com/library-science/index.php/journal/article/view/4341

Ibeh, O. B., Mmoya, C. S., Orakpor, A. M., & Okoye, C. O. (2025). Influence of knowledge management practices on academic library services in federal universities in Anambra and Imo States, Nigeria. *Information Impact: Journal of Information and Knowledge Management, 16*(1), 63–74. https://dx.doi.org/10.4314/iijikm.v16i1.6

Ibeh, O. B., Muokebe, B. O., Agwuna, O. M., & Orakpor, A. M. (2025). Computer literacy competencies in contemporary academic librarianship: Imperatives for enhanced service delivery in the digital age. *OMANARP International Journal of Science and Technology, 2*(2), 1–9. https://acadrespub.com/index.php/oijst/article/view/99

Ibeh, O. B., Muokebe, B. O., Agwuna, O. M., & Orakpor, A. M. (2025). Issues of national security in Nigeria: The roles of the library. *OMANARP International Journal of Art and Social Sciences, 2*(2), 12–20. https://acadrespub.com/index.php/oijass/article/view/100

Ibeh, O. B., Muokebe, B. O., Agwuna, O. M., & Orakpor, A. M. (2025). Organisational culture of librarians in eastern Nigeria. *OMANARP International Journal of Library and Information Sciences, 2*(2), 1–13. https://acadrespub.com/index.php/oijlis/article/view/101

Ibeh, O. B., Muokebe, B. O., Agwuna, O. M., & Orakpor, A. M. (2025). Development of an electronic library management software for effective service delivery. *OMANARP International Journal of Education, 1*(2), 9–19. https://acadrespub.com/index.php/oije/article/view/102/91

Ibeh, O. B., Muokebe, B. O., Agwuna, O. M., Orakpor, A. M., & Aluta, G. (2025). Availability and constraints to use of electronic information resources by postgraduate students at Tansian University, Umunya, Anambra State. *OMANARP International Journal of Art and Social Sciences, 2*(2), 21–32. https://acadrespub.com/index.php/oijass/article/view/106

Ikpoza, K., Nwanyaku, C. B., Ibeh, O. B., & Orakpor, A. M. (2025). Availability and use of ICT and multimedia resources in teaching and learning in Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. *ATBU Journal of Science, Technology and Education, 13*(2), 191–201. https://www.atbufstejoste.com/index.php/joste/article/view/2467

Kasumu, R. Y., & Agbarakwe, H. A. (2024). Awareness, perception and challenges of artificial intelligence integration for learning among postgraduate students in Faculty of Education, Ignatius Ajuru University of Education. *Journal of Education in Developing Areas, 32*(1), 70–82.

Koko, W. N., & Ogenima, G. (2025). Postgraduate business education students' competencies in utilizing artificial intelligence tools for learning and research in Rivers State universities. *World Journal of Innovation and Modern Technology, 9*(8), 17–29.

Moruf, H. A., & Dangani, B. U. (2020). Scholarly engagement and innovation in postgraduate research. *Journal of Higher Education Research, 15*(3), 212–228.

Muokebe, B. O., Ibeh, O. B., Orakpor, A. M., Agwuna, O. M., & Uzoigwe, I. P. (2025). Accessing electronic databases for curriculum delivery in academic library. *OMANARP International Journal of Education, 1*(1), 34–45. https://acadrespub.com/index.php/oije/article/view/105

Nwile, C. B., Amaewhule, E. C., & Ezeugo, C. R. (2025). Utilization of artificial intelligence tools for improving educational outcomes of students in public universities in Rivers State, Nigeria. *African Journal of Humanities & Contemporary Education Research, 19*(1), 195–209.

Okagbue, E. F. (2018). Postgraduate students in the twenty-first century: Navigating complex information environments. *Higher Education Studies, 8*(4), 89–103.

Okechukwu, I. C., & Orakpor, A. M. (2017). Current trends in information brokerage and consultancy in Nigeria. *Ebonyi Journal of Library and Information Science, 4*(2), 305–314.

Okeke-John, R., Ibegbulam, I., Orakpor, A. M., & Asom, F. (2013). Libraries as change agent for promoting knowledge society for sustainable development. *Global Review of Library and Information Science, 9*, 1–15. https://www.researchgate.net/publication/286442572

Okore, A. M., Njoku, E. O., & Orakpor, A. M. (2013). Attitudes of academic librarians in South East Nigeria towards creative and innovative library services. In *Compendium of NLA 2013 Conference Paper Presented During the Nigerian Library Conference/AGM* (June 9–14, Calabar). Nigerian Library Association.

Oladunni-Mohammad, B. M. (2024). Postgraduate business educators' usage and competence levels of AI tools for research activities in universities in Southwest Nigeria. *International Journal of Innovative Technology Integration in Education, 7*(1), 1–10.

Orakpor, A. M. (2012). *Comparative study of the reading habits of theological students* [Unpublished manuscript]. University of Nigeria, Nsukka. http://www.unn.edu.ng/publications/files/images/orakpor%20Adaora.pdf

Orakpor, A. M. (2020). Libraries and restructuring

questions in Nigeria: The South Eastern librarians' perception. *Library Philosophy and Practice (e-journal)*, 4616. https://digitalcommons.unl.edu/libphilprac/4616

Orakpor, A. M., & Anyaoku, E. (2012). Knowledge and use of web 2.0 by librarians. *African Journal of Library, Archives and Information Science*. https://www.semanticscholar.org/Orakpor

Orakpor, A. M., & Ezekwibe, D. U. (2025). Information literacy skills search strategy and information needs of the postgraduate students of Federal College of Education Technical Umunze. *International Journal of Information Resource Management, 2*(2), 1–13. https://www.ijirm.com.ng

Orakpor, A. M., & Igwilo, C. V. (2024). Perception of university library staff on community engagement through social media. In *Nigerian Library Association on Promoting Diversity and Inclusiveness Through Innovative Library and Information Service Delivery in Nigeria* (pp. 598–606).

Orakpor, A. M., & Modili, A. (2024). Impact of information communication technology on the acquisition of library materials in Federal Polytechnic Oko. *NAU Journal of Library and Information Science*.

Orakpor, A. M., & Omoruyi, F. T. (2022). Inspiring online library and information services during COVID-19: Perception of information professionals in academic libraries in Anambra State. *Library Research Journals, 7*, 13–21. https://journals.unizik.edu.ng/index.php/Irj/article/view/1476

Orakpor, A. M., Agbanu, A., & Muokebe, B. O. (2025). Library skills and valued orientation: Implications for Chukwuemeka Odumegwu Ojukwu medical students. *Journal of Applied Information Science and Technology, 17*(2).

Orakpor, A. M., Ezejiofo, V. O., & Nwana, R. E. A. (2010). Information and communication technology in library school education in Anambra State. *Anambra State Library and Information Digest: Journal of the Nigerian Library Association, 4*(1), 23–34.

Orakpor, A. M., Muokebe, B. O., Anyaegbunam, C. J., Agwuna, O. M., & Ibeh, O. B. (2025). Application of information communication technology in library development in public libraries operations in Anambra State, Nigeria. *ATBU Journal of Science, Technology and Education, 13*(2), 179–190. https://www.atbufstejoste.com/index.php/joste/article/view/2466

Orakpor, A. M., Muokebe, B. O., Ibeh, O. B., Agunwa, O. M., & Ugheru, C. G. (2025). Students' use of electronic information resources at Admiralty University of Nigeria library. *OMANARP International Journal of Library and Information Sciences, 2*(2), 14–25. https://acadrespub.com/index.php/oijlis/article/view/103

Orakpor, A. M., et al. (2014). Acquisition copyright and licensing of electronic resources. *Anambra State Library and Information Digest: Journal of the Nigerian Library Association, 7*(1), 1–13. https://lisdigest.org/index.php/lisd/article/view/83

Osang, O. G., Idiong, S. P., & Akanimoh, M. E. (2025). Unethical issues in the use of artificial intelligence (AI) among undergraduates in public universities of Cross River State, Nigeria. *Journal of Humanities and Social Policy, 11*(5), 136–146.

Ottonicar, S. L. C., Manhique, I. L. E., & Mosconi, E. (2021). Ethical aspects of information literacy in artificial intelligence. In *Responsible AI and ethical issues for businesses and governments* (pp. 179–201). IGI Global.

Peters, O., & Olojede, H. T. (2025). Influence of generative artificial intelligence (GenAI) in Nigerian higher education. *Àgídìgbo: ABUAD Journal of the Humanities, 13*(1), 233–244.

Resnik, D. B., & Hosseini, S. R. (2024). Ethical principles for AI in research: Transparency, fairness, and accountability. *Accountability in Research, 31*(3), 245–267.

Samuel, N. (2025). Ethical implications of artificial intelligence in education: Safeguarding plagiarism, academic integrity, and data privacy in Nigerian universities. *Journal of Education, Communication, and Digital Humanities, 2*(1), 123–129.

Usulor, S., et al. (2025). Classroom orientation and ethical AI use. *Journal of Academic Ethics*, forthcoming.

Xie, B., et al. (2021). Digital research tools in modern research environments. *Computers in Human Behavior, 125*, 106956.