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ARTIFICIAL INTELLIGENCE LITERACY AND USE BY POSTGRADUATE STUDENTS IN SELECTED PRIVATE UNIVERSITIES IN OGUN STATE, NIGERIA.

BY

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Abstract:

Purpose: *This study surveyed AI literacy and use by postgraduate students in selected private universities in Ogun State, Nigeria.*

Design/Methodology: *The survey research design and stratified random sampling technique were employed for this study. The population comprised 3,026 postgraduate students of Covenant University, Babcock University, Crescent University and Bells University of Technology in Ogun State, Nigeria. A sample size of 353 postgraduates was determined using Taro Yamane's formula. A structured questionnaire with Cronbach's alpha reliability coefficients between 0.89 and 0.99 was used for data collection. A response rate of 85% was achieved, and the data were analysed using descriptive statistics and linear regression.*

Findings: *The results (weighted mean of AI use: 2.74, AI literacy: 2.93) showed that postgraduate students were aware of AI, used it, evaluated it and had an ethical understanding of its implications. Hence, the study found that AI literacy and use by postgraduate students in the selected private universities were high. The results also revealed that AI literacy significantly influences AI use, that is, when AI literacy increases, postgraduate students' usage of AI technologies will increase.*

Originality/Value: *Artificial intelligence is a dynamic and emerging technology; hence, it was recommended that universities should partner with libraries and ethics committees to organise consistent training sessions in order to maintain the level of AI literacy of postgraduate students and encourage responsible usage even as new AI applications are introduced.*

Implication: *It is necessary to maintain and enhance AI literacy to promote responsible use of AI in educational settings*

Keywords: *Artificial Intelligence, Literacy, Postgraduate Students, Private Universities.*

Paper type: *Empirical research*

Introduction

The widespread incorporation of Artificial Intelligence (AI) across various sectors has made it accessible for use in daily tasks. Its ability to provide personalized recommendations on various topics has even made people more inclined to conversations with ChatGPT, Gemini, Copilot and other AI applications than searching for information directly via Google. Popenici and Kerr (2021) described AI as an umbrella term encompassing an automated device that can exhibit human-like intelligence processes, such as learning, reasoning, and self-

correction. AI applications are tools that can imitate the workings of the human mind to generate text, summarize and carry out cognitive texts (Fitria, 2021). AI applications perform in lesser time activities that would take human hours or even days to carry out. Common examples of AI applications include facial recognition, speech-to-text, content-creating and generative AI tools etc. AI use refers to how individuals utilize AI applications and tools. AI applications have been used to facilitate remote patient monitoring in healthcare, malware detection in cybersecurity, fraud detection in finance and remote teaching and learning in education. Pertaining to education, the application of Artificial intelligence (AI) has resulted in enormous possibilities for improving the teaching and learning process overall, automating administrative duties, and personalizing instruction (Madu and Musa, 2024). In higher education, AI applications facilitate research, administration and reduce the workload of teachers and students. Postgraduate students use AI tools such as ChatGPT, Gemini, QuillBot to draft academic essays, write research papers and organize references.

Globally, postgraduate students, unlike undergraduate students, have more academic and research responsibilities. This need for them to manage more advanced and complex academic writing assignments, such as scholarly articles, international conferences, proposals, and theses etc. (Kurniati & Fithriani, 2022), leads them to use AI tools (Chauke et al., 2024). Using these tools help them to improve their organization and reduce the time spent on each task. However, despite the benefits of AI applications, its use has raised concerns about privacy, transparency and bias. Salvagno et al., (2023) noted that ChatGPT is a promising and powerful tool for tasks such as draft generation, article summarizing, and language translation, making academic writing easier and faster, nevertheless, its use in scientific writing by students raises ethical concerns and calls for regulation. Scholars have also explained that the use of AI tools when not adequately supervised can be used to plagiarize scholarly materials and cheat during academic tests (Ezekiel & Akinyemi, 2022; Zhai et al. 2021). Given this concerns, Ezekiel and Akinyemi (2022) suggested that training and orientation programs should be introduced to encourage the right use of AI in higher education. Their suggestion implies that AI literacy may influence the AI use of postgraduate students, showing that the proper use of AI requires relevant skills and knowledge. Chen et al. (2021) observed that the application of artificial intelligence in

education has increased and exceeded the conventional understanding of AI as a supercomputer, showing that AI has become a multifunctional tool rather than a remote technical system. This transformation implies that the effective use of AI tools in education demands skills and knowledge of how AI tools reason and generate information, which exceeds basic digital literacy. AI literacy, being the knowledge and skills required to use AI can significantly influence the willingness of students to adopt AI in their studies (Long & Magerko, 2020; Zawacki- Richter et al., 2019).

The set of competencies that enable individuals to evaluate AI technologies critically; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace referred to as AI literacy (Long & Magerko, 2020). It includes a range of skills and competencies required to utilize artificial intelligence tools including AI ethics. AI literacy is vital and necessary for postgraduate students to harness the benefits of AI in their academics. According to Ma and Chen (2024), AI literacy is the ability to accurately understand the basics of AI, use AI tools ethically and critically evaluate these tools or the content generated by these tools. Similarly, AI literacy can also be described as the ability to identify, use and evaluate correctly AI products, that is tools per ethical standards (Wang et al., 2023). From these perspectives, AI literacy refer to the skills, abilities and knowledge required in using artificial intelligence tools and applications. AI literacy has been noted to improve how students use AI. Ma and Chen (2024) assert that AI literacy is one of the factors influencing the use of AI technologies. Literature revealed that AI use in developing countries, such as Nigeria has greatly increased, however, empirical work explicitly associating AI literacy to AI use among postgraduate students remains limited. Consequently, this study examined the influence of AI literacy on AI use by postgraduate students in selected private universities in Ogun State.

Research Objectives

The main objective of the study was to investigate the influence of AI literacy on the use of AI by postgraduate students. Specific objectives include:

1. **assess the level of AI literacy of postgraduate students in selected private universities in Ogun State;**
2. **find out the extent to which postgraduate students in selected private universities in Ogun State use AI technologies in academic research;**

3. **determine the influence of AI literacy on AI use by postgraduate students in selected private universities in Ogun State, Nigeria;**

Research Questions

The following research questions were answered in this study:

1. **To what extent do postgraduate students in selected private universities in Ogun State use AI technologies in academic research?**
2. **What is the level of AI literacy of postgraduate students in selected private universities in Ogun State?**

Hypothesis

Ho1: AI literacy has no significant influence on AI use by postgraduate students in selected private universities in Ogun State, Nigeria.

Literature Review

Concept of Artificial Intelligence (AI) Literacy

Literacy was originally defined as the ability to read and write. In the current digital age, this definition does not capture the knowledge and skills required to create and use technologies, particularly in higher education. The overload of information and the evolution of a knowledge-based society imply that every individual must not only be literate in the conventional sense but must be 'digitally literate'. Consequently, the term literacy has recently been applied to defining knowledge and skills required in various disciplines that have the same potential to enable expression, communication, and access to knowledge (Long & Magerko, 2020). For example, digital literacy, information literacy, computational literacy, data literacy, scientific literacy and now, Artificial Intelligence literacy. The concept of AI literacy is relatively new, so most researchers coming up with a definition of the term began to do so based on the term 'literacy' (Ng et al., 2021), which has been used to define skill sets across different disciplines. Still, very few researchers have provided a comprehensive definition and explanation for the concept of AI literacy. Long and Magerko (2020) define AI literacy as "the set of competencies that enables individuals to evaluate AI technologies critically; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace." This definition highlights the multifaceted nature of AI literacy, encompassing both technical skills and critical thinking abilities. It also reflects that AI literacy is founded on other literacy, like digital literacy.

AI literacy is crucial for several reasons. Firstly, it empowers individuals to critically evaluate AI-powered systems and their potential biases (Zhao et al., 2022). By understanding the underlying algorithms and data used in AI systems, individuals can identify and mitigate potential harms. Secondly, AI literacy enables individuals to effectively utilize AI tools to enhance productivity and creativity. For instance, AI-powered writing assistants can help students improve their writing skills, while AI-driven medical diagnosis tools can assist healthcare professionals in making accurate decisions. Thirdly, by understanding the societal implications of AI, individuals can advocate for policies that promote the beneficial use of AI while minimizing its negative impacts (Young et al., 2024; Acosta-Enriquez et al., 2024).

Artificial Intelligence (AI) Use

According to UNESCO (2019), AI technologies facilitate the achievement of Sustainable Development Goal 4, ensuring equitable and inclusive access to education. It presents learning opportunities to people who would ordinarily have a limited chance at being educated such as refugees and disabled people. AI use in higher education facilitates global best practices (Essien et al., 2024). Ukeh and Anih (2024) stated that AI applications have the potential to revolutionize traditional teaching methods and streamline research processes. In higher education, some AI tools commonly used are Quill Bot, Grammarly, Deeply, ChatGPT etc (Liang, 2023). These tools are categorized as text generation tools, image generation tools, data analysis tools, plagiarism detectors and grammar improvement tools. Oluwadiya et al. (2023) observed from their study of ten universities that Grammar checkers were the most widely used AI tools among students and lecturers. ChatGPT is a popular tool commonly used by students (Wu, 2023) and it is used for language translation, content generation and language modelling (Cotton et al. 2023). Aside from helping students identify grammatical errors and paraphrase their academic writing, ChatGPT also helps them improve their academic writing skills (Chauke et al. 2024). Similarly, QuillBot, a paraphrasing tool, helps students to paraphrase, improve grammar structure, summarize long sentences and detect plagiarism (Fitria, 2021). Furthermore, Alade and Daniel (2023) reported that most postgraduate students at Redeemer's University actively used AI in their academic work. Correspondingly, Ofem et al. (2024) noted that AI tools were used to a high extent by students at the University of Calabar.

Despite the benefits of AI tools to students, there are concerns about their use in education, most especially by postgraduate students who have to churn out academic papers while upholding academic integrity. Day (2023) argues that the use of ChatGPT in research may adversely affect the academic success of students. He further explained that the wrong use of the chatbot by students can be easily detected by the identification of fake citations and references in such work. One common challenge associated with the use of ChatGPT in research is the potential for postgraduate students to solely depend on this AI tool, leading to difficulties in conducting research without its assistance (El-Seoud et al., 2023). About the use of AI tools in academic writing, Conde et al. (2024) revealed that the potential issues include the accuracy of generated text and ethical concerns. This makes it evident that the correctness of text generated by AI is questionable. As a result, in using AI tools for academic writing, the accuracy of generated text must be ascertained because there is a likelihood that the text contains false statements and raises ethical concerns.

AI Literacy and Use by Postgraduate Students

Huang et al. (2024) concluded in their study that while ChatGPT and other text generative AI can be useful, learning and teaching companions for both students and lecturers, human expertise and judgement is needed in working with ChatGPT. Laupichler et al. (2024) also discovered a strong positive correlation between AI literacy and positive attitudes towards using AI and a weak negative correlation between AI literacy and negative attitudes. They concluded that focus should be more on technical courses aspects to increase the AI literacy of medical students as this could impact their attitude toward using AI. The study of Reyes-Villalba et al. (2024) underscored the importance of promoting digital literacy among educators and students, as well as fostering a deep understanding of ethical principles and implications of AI in the educational field. They noted that this approach will help cultivate an informed educational community ready to tackle challenges and leverage the opportunities that AI offers in the educational context. These studies underscore the relevance of AI literacy to AI use, suggesting that when students have the necessary AI skills and knowledge, they would be better positioned to use AI.

Moreover, Kong et al., (2022) in their research, discovered that programming knowledge was not a prerequisite to AI literacy program. They noted that students who were successful in the AI literacy programs had basic mathematical concepts

such as slope, Euclidean distance, mean and standard deviation. Therefore, they proposed that basic mathematics, but not programming, is required to learn AI concepts. That is, being AI literate is not dependent on having prior of absolute programming knowledge such that even people who do not have specialized knowledge in the field of computer science can have the necessary skills and knowledge to use AI. In the work of Brown et al., (2023), they noted that students and staff in a UK university were reasonably AI literate. And although they did not examine the influence of AI literacy on AI usage, they recorded during interviews that respondents expressed a pressing need to be trained in order to harness AI opportunities and the necessity of having the skills to use AI ethically and responsibly. This implies that staff and students are of the opinion that having more knowledge and skills to use AI ethically would improve their ability to use AI rightly. Singh (2025) established that there is a significant positive relationship between AI literacy and AI usage by Generation Z in Northern India.

Methodology

The population of the study comprised 3026 postgraduate students from four private universities (Covenant University, Babcock University, Crescent University and Bells University of Technology) in Ogun State, Nigeria. These private universities were selected because they were established before 2020. The researcher chose to exclude private universities that were established later than 2020 because they have not been running academic activities for up to 10 years. Also, not all the private universities in the state offer postgraduate programs. Using the Taro Yamane formula, the sample size of the study was calculated to be three hundred and fifty-three (353) postgraduate students, and the stratified sampling technique was employed to select the participants. The instrument was a structured questionnaire partly developed by the researchers. The scale that was used to elicit data from the respondents on AI literacy was adapted from the Artificial Intelligence Literacy Scale for Chinese College Students (AILS-CCS), designed by Chen and Ma (2024) while the researchers, developed the instrument for AI use. Cronbach's alpha reliability coefficients for the constructs ranged from 0.89 to 0.99, and an 85% response rate was achieved. The respondents were asked to rate their AI literacy and use on a 4-point Likert scale. Data extracted from the questionnaire was analyzed using descriptive statistics and linear regression. The Statistical Product and Services Solutions (SPSS) was employed for data analysis. Three hundred

and one copies (85%) of the questionnaire were retrieved and analyzed.

Results and Discussion

The demographic analysis of the data revealed that most of the participants were females (51.5%), while males comprise 48.5% of the entire population. Regarding age, the highest number of respondents were within the age group of 21-30(45.2%), and the lowest were within the age group of 51 and above (12.6%). The analysis also revealed that most of the respondents are currently enrolled in a master's degree program, which may be due to the age of most respondents (21-30). This shows that most postgraduate students were young, suggesting they were more likely to be technology-inclined.

Table 1: Level of AI Literacy of Postgraduate Students in Selected Private Universities in Ogun State.

AI Literacy	VH 4	H 3	L 2	VL 1	Mean	SD
AI Application						
My ability to use artificial intelligence meaningfully to achieve my academic goals is…	114(37.9)	131(43.5)	45(15.0)	11(3.7)	3.16	.81
My proficiency in using AI tools or applications for my academic work is…	92(30.6)	152(50.5)	56(18.6)	1(3)	3.11	.70
My ability to use AI applications to help me solve problems in my academics is…	95(31.6)	153(50.8)	44(14.6)	9(3.0)	3.11	.76
					3.13	**.76**
AI Evaluation						
My ability to assess the relevance of AI-generated outputs based on the context of the task before using them in academic or research work is…	104(34.6)	141(46.8)	49(16.3)	7(2.3)	3.14	.76
My ability to cross-check AI-generated output with other reputable sources to ensure accuracy is…	107(35.5)	116(38.5)	74(24.6)	4(1.3)	3.08	.81
My ability to select the appropriate solution from various options provided by artificial intelligence	88(29.2)	138(45.8)	71(23.6)	4(1.3)	3.03	.76

is…						
My ability to identify biases in content generated by artificial intelligence is…	86(28.6)	127(42.2)	83(27.6)	5(1.7)	2.98	.79
					3.06	**.78**
AI Ethics						
My adherence to ethical principles when using artificial intelligence tools or applications is…	67(22.3)	175(58.1)	55(18.3)	4(1.3)	3.01	.68
My alertness to the misuse of artificial intelligence tools and applications is…	93(30.9)	123(40.9)	72(23.9)	13(4.3)	2.98	.85
My ability to critically reflect on the impact of artificial intelligence on individuals and society is…	69(22.9)	157(52.2)	67(22.3)	8(2.7)	2.95	.75
My vigilance about information security issues when using artificial intelligence tools or applications is…	77(25.6)	127(42.2)	93(30.9)	4(1.3)	2.92	.78
My vigilance about privacy issues when using artificial intelligence tools or applications is…	67(22.3)	140(46.5)	92(30.6)	2(0.7)	2.90	.74
					2.95	**.76**
AI Awareness						
My ability to explain the definition of artificial intelligence in my own words is…	91(30.2)	166(55.1)	41(13.6)	3(1.0)	3.15	.68
My ability to distinguish AI from traditional computer programs is…	82(27.2)	136(45.2)	66(21.9)	17(5.6)	2.94	.85
My understanding of the role of data in training and improving AI systems is…	71(23.6)	105(34.9)	118(39.2)	7(2.3)	2.80	.83
My understanding of how AI perceives the world (e.g. seeing, hearing) to perform various tasks is…	45(15.0)	145(48.2)	108(35.9)	3(1.0)	2.77	.71
My ability to explain the differences between machine learning and deep learning is…	63(20.9)	111(36.9)	120(39.9)	7(2.3)	2.76	.80

My ability to define basic concepts like algorithms and data concerning AI is…	33(11.0)	127(42.2)	125(41.5)	16(5.3)	2.59	.75
My ability to discuss the origins and development of AI is…	33(11.0)	106(35.2)	143(47.5)	19(6.3)	2.51	.77
Weighted mean					**2.93**	**.77**

Table 1 shows that the AI literacy of postgraduate students in selected private universities in Ogun, State, Nigeria is high. They have a reasonably strong understanding and application of AI, although not at the "Very high" level. Across the indicators of AI literacy, AI Application has the highest mean, closely followed by AI Evaluation and AI Ethics, while AI Awareness is the lowest. The results suggest that postgraduate students are moderately literate in AI, with strong practical usage skills but weaker conceptual understanding, especially in areas such as AI history, ethical nuance, and advanced evaluation.

The findings revealed that postgraduate students in selected private universities in Ogun State, Nigeria, had a high level of AI literacy; that is, they had the necessary skills and knowledge to use AI. The results indicate that many postgraduate students can describe AI in general terms but have a limited understanding of technical concepts and history. This finding is supported by Teng et al. in Hornberger et al. (2023).

Table 2: Extent of AI use by postgraduate students

Types of AI used I use …	SA Freq(%)	A Freq(%)	D Freq(%)	SD Freq(%)	Mean	SD
Text generation tools (e.g. ChatGPT, Gemini, Jasper etc.)	184(61.1)	99(32.9)	9(3.0)	9(3.0)	3.52	.70
Plagiarism detection tools (e.g. Turnitin, Grammarly etc.)	161(53.5)	106(35.2)	19(6.3)	15(5.0)	3.37	.81
Grammar check tools (e.g. Grammarly, Quillbot etc)	131(43.5)	125(41.5)	31(10.3)	14(4.7)	3.24	.82
Text summarization tools (e.g. ChatGPT, QuillBot etc.)	119(39.5)	124(41.2)	19(6.3)	39(13.0)	3.07	.99
Content discovery tools (e.g.	126(41.9	95(31.6)	49(16.3)	31(10.3)	3.05	.99

Crunchbase, Google Discover etc)	**)**					**7**
Translation tools (e.g. Google Translate, ChatGPT, etc)	**89(29.6)**	**134(44.5)**	**59(19.6)**	**19(6.3)**	**2.97**	**.86**
Text-to-speech tools (e.g. Google translate, Amazon Polly etc.)	**74(24.6)**	**148(49.2)**	**54(17.9)**	**25(8.3)**	**2.90**	**.87**
Metadata creation and identification tools (e.g. Amazon Recognition, Google Cloud Vision API, etc.)	**71(23.6)**	**158(52.5)**	**40(13.3)**	**32(10.6)**	**2.89**	**.89**
Image and video generation tools (e.g. DALL-E, Google Veo, etc.)	**48(15.9)**	**133(44.2)**	**46(15.3)**	**74(24.6)**	**2.52**	**1.0 3**
Copyright check tools (e.g. TinEye, AudiTag etc)	**72(23.9)**	**99(32.9)**	**57(18.9)**	**73(24.3)**	**2.52**	**.92**
Data analysis and visualization tools (e.g. Zoho Looker, Microsoft Power BI, etc.)	**48(15.9)**	**128(42.5)**	**53(17.6)**	**72(23.9)**	**2.51**	**1.03**
Code generation tools (e.g. GitHub Copilot, CodeWhisperer, etc.)	**41(13.6)**	**103(34.2)**	**98(32.6)**	**59(19.6)**	**2.42**	**.95**
					2.92	**0.91**

Frequency of Use	***VF*** *Freq(%)*	***F*** *Freq(%)*	***NF*** *Freq(%)*	***N*** *Freq(%)*	***Mean***	***STD***
Grammar check tools (e.g.Grammarly, Quillbot etc)	130(43.2)	90(29.9)	57(18.9)	24(8.0)	3.08	.97
Text generation tools	**113(37.5)**	**91(30.2)**	**63(20.9)**	**34(11.3)**	**2.94**	**1.02**
Plagiarism detection tools (e.g. Turnitin, Copyscape etc.)	**81(26.9)**	**126(41.9)**	**57(18.9)**	**37(12.3)**	**2.83**	**.96**
Text Summarization tools	**97(32.2)**	**95(31.6)**	**62(20.6)**	**47(15.6)**	**2.80**	**1.06**
Translation tools e.g. Google Translate	73(24.3)	98(32.6)	88(29.2)	42(14.0)	2.67	**.99**
Text-to-speech tools	48(15.9)	101(33.6)	112(37.2)	40(13.3)	2.52	**.92**
Data analysis and visualization Tools	50(16.6)	76(25.2)	100(33.2)	75(24.9)	2.34	**1.03**
Image and video generation	45(15.0)	60(19.9)	129(42.9	67(22.3)	2.28	**.97**

Tools			)			
Content discovery tools (e.g. Crunchbase, Google Discover)	**50(16.6)**	**60(19.9)**	**97(32.2)**	**94(31.2)**	**2.22**	**1.06**
Metadata creation and identification tools (e.g. quibb)	44(14.6)	65(21.6)	99(32.9)	93(30.9)	2.20	1.04
Code generation tools	23(7.6)	94(31.2)	93(30.9)	91(30.2)	2.16	.95
Copyright check tools (TinEye, AudiTag)	33(11.0)	58(19.3)	120(39.9)	90(29.9)	2.11	.96
					2.51	**0.99**

Purpose of Use	***SA*** *Freq(%)*	***A*** *Freq(%)*	***D*** *Freq(%)*	***SD*** *Freq(%)*	***Mean***	***STD***
I use AI for research assistance	**148(49.2)**	**129(42.9)**	**19(6.3)**	**5(1.7)**	**3.40**	**.68**
I use AI for learning and skill advancement	126(41.9)	126(41.9)	35(11.6)	14(4.7)	3.21	.82
I use AI to do my assignments	118(39.2)	125(41.5)	51(16.9)	7(2.3)	3.18	.79
I use AI to draft papers and improve my grammar	86(28.6)	143(47.5)	52(17.3)	20(6.6)	2.98	.85
I use AI to write and generate literature reviews	104(34.6)	104(34.6)	72(23.9)	21(7.0)	2.97	.93
I use AI to translate languages	61(20.3)	146(48.5)	66(21.9)	28(9.3)	2.80	.87
I use AI to generate slides and create presentations	48(15.9)	127(42.2)	99(32.9)	27(9.0)	2.65	.85
I use AI for data analysis	57(18.9)	127(42.2)	69(22.9)	48(15.9)	2.64	.96
I use AI for similarity index check	54(17.9)	117(38.9)	93(30.9)	37(12.3)	2.62	.92
I use AI for content discovery	58(19.3)	97(32.2)	104(34.6)	42(14.0)	2.57	.96
I use AI for metadata creation and identification	35(11.6)	86(28.6)	119(39.5)	61(20.3)	2.32	.93
I use AI for copyright check	47(15.6)	86(28.6)	78(25.9)	90(29.9)	2.30	1.06
					2.80	**0.89**
AI use (overall weighted Mean)					**2.74**	**0.93**

Table 2 shows that postgraduate students in selected private universities in Ogun State, Nigeria, demonstrate a high level of agreement on using AI for academic research (overall mean = 2.74 on a 4-point scale). They heavily rely on AI tools that

support academic writing, with text generation tools (mean = 3.52), plagiarism detection tools (mean = 3.37), and grammar checking tools (mean = 3.24) being the most used. Grammar check tools are the most frequently used (mean = 3.08), followed by text generation tools (mean = 2.94). Plagiarism detection and summarization tools were also frequently used. The main purposes of AI use include research assistance (mean = 3.40), skill development (mean = 3.21), and assignment completion (mean = 3.18), showing that students view AI as a valuable academic aid. However, tools for content discovery (mean = 2.57), metadata creation (mean = 2.32), and copyright checks (mean = 2.30) are used less, indicating varied use across functions.

The findings of this study reveal that the AI use of postgraduate students was high. These results align with the findings of Alade and Daniel (2023), who reported that most postgraduate students at Redeemer's University actively used AI in their academic work. However, the findings of this study differ from those of Asongo et al. (2024), who reported that due to a lack of awareness and accessibility, the use of AI by postgraduate students in Benue State is low. Crosta et al. (2024) also found limited AI use among online doctoral students at the University of Liverpool, attributing it to a lack of understanding. Text generation tools (e.g., ChatGPT, Gemini) were indicated as the most used AI tools, while copyright check tools and code generation tools are the least used. Brown et al. (2023) noted in their study that ChatGPT was widely used. Similarly, Ofem et al. (2024) noted that AI tools were widely utilized by students at the University of Calabar. Contradicting the findings of this study, Oluwadiya et al. (2023) discovered that Grammar checkers were the most widely used AI tools among students and lecturers across ten universities. These variations highlight that AI use may be context-dependent, influenced by institutional policies, exposure, and access to technological resources. Also, students use AI tools for various purposes although they use it in their academics.

Table 3: Influence of AI Literacy on AI Use by Postgraduate Students in Selected Private Universities in Ogun State, Nigeria.

Variables	B	Std. Error	Beta (β)	T	*P*	R^2	*Adj.* R^2	F	df(residual)	ANOVA (Sig)
(Constant)	52.565	4.729		11.115	.000	0.269	0.259	27.247	4(296)	0.000
AI	.128	.298	.031	.431	.667					

Awareness					
AI Application	1.662	.633	.213	2.625	.009
AI Evaluation	.973	.584	.161	1.666	.097
AI ethics	1.100	.343	.212	3.210	.001

Dependent Variable: AI Use

Note: N=301. β = Standardized Coefficient, significant at 0.05

The results in Table 3 indicate that AI literacy significantly influences postgraduate students' use of AI in selected private universities in Ogun State. Nigeria. This finding implies that enhancing AI literacy, particularly in AI application and ethics, could improve students' use of AI for academic and research purposes. Practical proficiency in using AI (AI Application) and ethical awareness (AI Ethics) are the most influential factors driving AI use among postgraduate students. The insignificance of AI Awareness and Evaluation suggests that knowledge of AI concepts and critical assessment alone may not be enough to foster active use of AI.

Furthermore, the findings suggest that AI use is not influenced simply by a general understanding alone but by specific aspects of AI literacy because not all the indicators of AI had a significant influence on use. It suggests that familiarity with AI tools, ethical considerations, and practical applications encourages students to integrate AI into their academic and research activities. This aligns with the cognitive domain of Bloom's Taxonomy (Bloom, 1956), which emphasises knowledge, comprehension, and application as key educational goals. The ability of students to apply AI concepts and tools reflects higher-order thinking skills such as application and analysis. It also supports the assumptions of the UTAUT model, which views facilitating conditions, such as access to knowledge and resources, as critical enablers of technology use. This finding corroborates that of Singh (2025), which established a significant positive relationship between AI literacy and AI usage by Generation Z in Northern India.

Conclusion and Recommendations

As AI is speedily permeating every sector, its use is increasing among students, especially postgraduate students, and their level of AI literacy towards it might impact their utilisation. Based on the findings, it was concluded that the AI literacy and use

of postgraduate students in the selected universities are high, and their AI literacy influences their AI use. However, their application of AI and AI ethics are the only indicators of AI literacy which significantly influence AI use. Therefore, this study highlighted that AI literacy plays a significant role in shaping the AI usage of postgraduate students, emphasising that it is necessary to maintain and enhance AI literacy to promote responsible use of AI in educational settings.

Given these findings, the following recommendations were made:

1. As AI tools will likely continue to evolve in academic settings, universities should consistently organise workshops and training, coordinated by libraries and ethics committees, to help students maintain and reinforce their existing AI literacy in order to keep pace with the rapid evolution of AI technologies.
2. Educational institutions should also leverage the relationship between AI literacy and use, using scaffolding progression to embed literacy-building activities into coursework tasks so that the AI literacy of students translates into immediate use.
3. Since AI ethics, an indicator of AI literacy, significantly influences AI use, university administration and educational policymakers should also strengthen formal policies governing the ethical use of AI tools to ensure that the observed high literacy of students translates into responsible use rather than simply frequent use.

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