

## Assessment of Islamic Studies Undergraduates' Awareness and Utilisation of Artificial Intelligence Tools in Kwara State, Nigeria

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### Abstract

*Students' awareness and utilisation of Artificial intelligence (AI) tools is crucial in the 21st century because their ability to positively navigate AI tools can facilitate their academic performance and research productivity. Therefore, this study assessed Islamic Studies undergraduates' awareness and utilisation of Artificial Intelligence (AI) tools in Kwara State, Nigeria. Descriptive survey research design was adopted for the study. The population of the study comprised 1,236 Islamic Studies undergraduates in public and private universities in the state. A sample size of 240 students was selected using multi-stage sampling technique. The researcher-developed and validated questionnaire by experts in educational technology and measurement and evaluation was used for data collection and validity index was 0.78. Test re-test method of a two-week interval was employed. A reliability coefficient of 0.82 was obtained using (PPMC) statistics. Mean and standard deviation was used to answer the research questions, while independent samples t-test was adopted to test the hypotheses, all at a 0.05 level of significance. The findings revealed a moderate level of awareness of AI tools among Islamic studies undergraduates, and their level of utilisation was occasional. The study further found no significant difference in Islamic studies undergraduates' awareness and utilisation of AI tools based on gender and university type. Based on the findings of the study, it was recommended among others that universities and educators should organize regular digital literacy workshops, and provide institutional support in order to encourage students to integrate AI tools into their academic and research practices for the purpose of enhancing their productivity and technological competence.*

**Keywords:** Islamic Studies, Awareness, Utilisation, Artificial Intelligence

## Introduction

Islamic Studies is an academic discipline that teaches Islam as a religion, culture, civilisation, and philosophy. It explores essential texts such as the Qur'an and Hadith and covers areas like Islamic legal theory (Fiqh), theology (Aqidah), and historical development. The discipline also addresses modern issues within Islamic thought and practice, seeking to connect traditional knowledge with contemporary realities.

In contemporary times, Islamic Studies has evolved from traditional madrasah-based instruction to formal educational settings, including universities and research institutions. The incorporation of Islamic Studies into official curricula aims to preserve Islamic heritage while addressing present-day societal needs. This approach promotes critical engagement with Islamic knowledge and its relevance to contemporary issues such as governance, social justice, and ethics (Abdur-Rafiu, 2021; Ibrahim et al., 2024). The significance of Islamic Studies lies in its ability to respond to modern challenges through the lens of Islamic principles. The integration of artificial intelligence tools into teaching, learning, and research has significantly transformed the educational landscape, benefiting all subject areas, including Arabic and Islamic Studies. In recent years, Arabic and Islamic Studies have experienced substantial influence from artificial intelligence, with numerous effective AI tools now being incorporated into the teaching and learning of Islamic Studies across the world (Issa & Mustapha, 2025).

Artificial Intelligence (AI) refers to computer systems capable of performing tasks that typically require human intelligence, such as language processing, problem-solving, and decision-making (Russell & Norvig, 2021). AI-powered tools such as Grammarly, Turnitin, and ChatGPT have become widely recognized in higher education for improving writing quality, ensuring academic integrity, and making high-quality information more accessible (Zawacki-Richter et al., 2019). However, while AI tools are transforming educational practices in developed nations, their adoption in many developing countries remains constrained by technological and infrastructural limitations (Mannuru et al., 2023).

Awareness of Artificial Intelligence tools is essential for leveraging their potential to enhance academic and research outcomes among Islamic Studies students. Awareness refers to the knowledge or perception of the existence and

functionalities of AI tools among students. It involves understanding how these tools operate, their potential applications, and the ethical considerations surrounding their use. According to Rogers' Diffusion of Innovations Theory (2003), awareness represents the initial stage in the innovation-decision process, where individuals are first exposed to a technology and begin to comprehend its purpose and utility.

Utilisation refers to the effective application and engagement with resources, tools, or systems to achieve specific goals. In the context of AI tools, utilisation involves the adoption, integration, and purposeful use of AI technologies to improve processes, enhance efficiency, and achieve desired academic outcomes. This includes activities such as using AI-powered software for writing assistance, data analysis, personalized learning, plagiarism detection, and research optimization. According to Venkatesh and Bala (2008), the use of technology is influenced by factors such as perceived usefulness, ease of use, and facilitating conditions, which collectively determine how individuals interact with and benefit from technological innovations.

Gender plays a significant role in teaching and learning, and its influence on students' academic outcomes cannot be overlooked. Abdur-Rafiu et al (2020) explained that gender differences arise from social and environmental factors that distinguish the sexes. It is further stated that, in Nigeria, gender bias remains widespread. Traditional gender roles are still strongly upheld, with boys and girls entering the educational system displaying different behaviours, attitudes, and values based on societal expectations. Akpan et al. (2024), indicated that men tend to be aware and use AI tools more than women in various educational settings. Factors contributing to this gap include biases related to confidence in technology, cultural norms, and historical underrepresentation of women in tech environments.

The type of educational institution, whether public or private, significantly influences the resources, exposure, and overall learning experiences available to students. Public universities, which rely mainly on government funding, typically serve a larger, and more diverse student population, but they often encounter obstacles such as insufficient funding, strike actions, and poor infrastructure (Ogunode & Ajinomoh, 2022). These challenges can impede the implementation and use of advanced technologies, including Artificial

Intelligence (AI), which necessitates stable infrastructure, training, and financial support.

In contrast, private universities are primarily financed through tuition and private investments. They generally offer smaller class sizes, better access to modern technologies, and greater flexibility in incorporating new tools into their curricula (Falola, 2025). Consequently, students at private universities may experience greater exposure to and use of AI tools for academic and research purposes. However, the high costs of private education can restrict access for a wider demographic (Pilani et al., 2023).

In view of the growing relevance of Artificial Intelligence in global education, understanding the level of awareness and utilisation of AI tools among Islamic Studies undergraduates has become imperative. As future educators and scholars, their ability to integrate AI into academic and research activities is vital for enhancing learning outcomes and promoting innovation within Islamic scholarship.

Despite the growing importance of Artificial Intelligence in education, the level of awareness and utilisation of AI tools remains inconsistent, particularly in humanities disciplines such as Islamic Studies, where traditional pedagogies dominate the teaching and learning as observed by Alenezi and Alenezi (2025). AbdurRafiu et al. (2024) noted that while AI tools offer significant benefits, their utilisation among Kwara State undergraduates are low. This is often attributed to poor awareness and lack of training, particularly in non-technical disciplines. Few studies have specifically examined the extent to which Islamic Studies undergraduates in Kwara State are aware of and utilize these tools. For instance, Nwodu (2023) discerned that students in Nigerian universities lack the necessary skills to leverage AI for research, also, Samuel and Salisu (2025) stated that in Nigeria, many educators and students lack technical skills needed to utilize AI tools effectively. However, there is limited data focusing on how this trend affects Islamic Studies programs in Universities in Kwara State. This gap in the literature highlights the need to assess the awareness and utilisation of AI tools among Islamic Studies undergraduates in Kwara State, Nigeria .

### **Objectives of the Study**

The main purpose of this study was to assess Islamic Studies undergraduates' awareness and utilisation of Artificial Intelligence (AI) tools in Kwara State, Nigeria. Specifically, the study sought to:

- i. investigated the level of awareness of AI tools among Islamic Studies undergraduates in Kwara State;
- ii. assessed the level of utilisation of AI tools among Islamic studies undergraduates in Kwara State.

### **Research Questions**

The following Research Questions were answered in this study

- i. What is the level of awareness of Artificial Intelligence (AI) tools among Islamic Studies undergraduates in universities in Kwara State?
- ii. What is the level of utilisation of AI tools among Islamic studies undergraduates in Kwara State?

### **Research Hypotheses**

The following hypotheses were formulated and tested for this study:

***H<sub>01</sub>***: There is no significant difference between male and female Islamic Studies undergraduates' level of awareness of AI tools for academic and research purposes in Kwara State.

***H<sub>02</sub>***: There is no significant difference between male and female Islamic Studies undergraduates' level of AI tools utilisation for academic and research purposes in Kwara State.

***H<sub>03</sub>***: There is no significant difference in the level awareness of AI tools for academic and research purposes among Islamic Studies undergraduates in public and private universities in Kwara State.

***H<sub>04</sub>***: There is no significant difference in the level of utilisation of AI tools for academic and research purposes among Islamic Studies undergraduates in public and private universities in Kwara State.

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## Methodology

This study adopted a descriptive survey research design. A descriptive survey allows the collection of quantitative data from a representative sample to generalize findings to a larger population. The design is suitable for identifying trends and relationships in students' awareness and utilisation of AI tools. The population of the study included 1,236 Islamic Studies undergraduates in Kwara State. The target population for this study consisted of 240 Islamic Studies undergraduates in four universities that offers Islamic Studies as a programme in Kwara State, Nigeria. Multi-stage sampling procedures were employed to select participants. Stratified Sampling technique was used to select the four sampled universities in both public and private in Kwara State. Also, simple random Sampling technique was used to sample 60 undergraduates of Islamic Studies from each of the four sampled Universities, totaled 240 respondents. The Instrument used was a researcher-developed questionnaire. The questionnaire contained three sections. Section A comprised the demographic information of the respondents. Section B contained items on undergraduate level awareness of AI tools, while section C consisted of items on undergraduate level of utilisation of AI tools. The instrument validated by experts in educational technology as well as measurement and evaluation was used for data collection and validity index was 0.78.. To ensure the reliability of the instrument, the test-retest method was used. The questionnaire was administered twice to a subset of respondents with a two-week interval between tests. The Correlation Coefficient of 0.82 was obtained using Pearson Product Moment Coefficient (PPMC). Percentage was used to describe demographic data of the respondents, Frequency counts, Mean and Standard deviation were used to answer research questions, while independent samples t- test was used to test the formulated hypotheses all at a 0.05 level of significance.

## Results and Analyses

**Table 1:** Demographic Information of the Respondents

Demographic Variable	Category	Frequency	Percentage %
Gender	Male	163	67.9
	Female	77	32.1
Institution Type	Public University	120	50.0
	Private University	120	50.0
Total Respondents		240	100.0

The data in the table 1 above showed that out of the 240 respondents, 163 (67.9%) were male, while 77 (32.1%) were female. This indicated that the majority of Islamic Studies undergraduates who participated in the study were male. The gender distribution reflected the predominance of male students in Islamic Studies programmes in universities in Kwara State.

Additionally, 120 respondents (50.0%) were from public universities, and 120 respondents (50.0%) were from private Universities. This shows that respondents were evenly distributed across public and private Universities in Kwara State. The equal representation was deliberate, in line with the stratified sampling technique adopted in the study, to ensure that both categories of Universities were adequately represented in the data.

### Answering Research Questions

This section presented the analysis and interpretation of data collected to answer the research questions formulated for the study. The responses of Islamic Studies undergraduates in universities in Kwara State were analysed using frequency counts, mean scores, and standard deviation. The mean scores were interpreted based on the decision rule. The results were presented and discussed in line with each research question.

**Research question 1:** What is the level of awareness of Artificial Intelligence (AI) tools among Islamic Studies undergraduates in universities in Kwara State?

**Table 2:** Frequency, Mean and Standard Deviation Output for: Islamic Studies undergraduates' Level of Awareness of Artificial Intelligence (AI) Tools.

S/N	Item	HA	MA	SA	NA	Mean	Std. D	Decision
1	I am aware of Writing Assistants (e.g., Grammarly, Quillbot, ProWritingAid) that support academic writing.	121	84	25	10	3.32	0.82	Moderately Aware
2	I am aware of Plagiarism Checkers (e.g., Turnitin, Copyscape, Unicheck) that help detect copied content.	89	88	44	19	3.03	0.94	Moderately Aware

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3	I am aware of Intelligent Tutoring Systems (e.g., Duolingo, Knewton) that provide personalized learning support.	100	44	10	3.09	0.84	Moderately Aware	
4	I am aware of Virtual Teaching Assistants and Chatbots (e.g., ChatGPT, Perplexity, IBM Watson Assistant) that assist in learning and academic tasks.	151	64	21	4	3.51	0.75	Highly Aware
5	I am aware of AI-based Language Tools (e.g., Google Translate, DeepL Translator, Microsoft Translator) that help with translation and language understanding.	115	84	34	7	3.28	0.81	Moderately Aware
Average Mean Scores					3.25	0.57	Moderately Aware	

**Note:** 3.50 - 4.00 = Highly Aware, 2.50 - 3.49 = Moderately Aware, 1.50 - 2.49 = Slightly Aware and 1.00 - 1.49 = Not Aware

The above table showed that respondents demonstrated a moderate level of awareness of AI tools, with a grand mean score of 3.25 on a 4-point Likert scale. Among the different AI tools, the highest level of awareness was recorded for Virtual Teaching Assistants and Chatbots (e.g., ChatGPT, Perplexity, IBM Watson Assistant) with a mean score of 3.51, followed by Writing Assistants (3.32) and AI-based Language Tools (3.28). On the other hand, respondents reported relatively lower awareness of Plagiarism Checkers (3.03) and Intelligent Tutoring Systems (3.09). This suggested that while students are familiar with conversational AI and writing-support tools, they are less exposed to AI-driven plagiarism detection and intelligent tutoring systems. Overall, the findings indicated that Islamic Studies undergraduates in Kwara State have moderate awareness of AI tools, with varying familiarity depending on the specific type of AI application.

**Research question 2:** What is the level of utilisation of AI tools among Islamic Studies undergraduates in Kwara State?

**Table 3:** Frequency, Mean and Standard Deviation Output for: Islamic Studies undergraduates' level of utilisation of AI tools.

S/N	Item	F	O	R	N	Mean	Std.D	Remark
6	I use AI tools to write and edit my assignments.	107	102	17	14	3.26	0.83	Occasionally
7	I use AI tools to assist with my academic or project- related research.	90	111	22	17	3.14	0.86	Occasionally
8	I use AI tools to learn and understand Arabic and Islamic terminologies.	97	80	42	21	3.05	0.96	Occasionally
9	I use AI tools to check for plagiarism and paraphrase written content.	68	96	52	24	2.87	0.94	Occasionally
10	I use AI tools to analyze academic or research data.	86	96	44	14	3.06	0.88	Occasionally
Average Mean Scores						3.08	0.67	Occasionally

**Note:** 3.50-4.00= Frequently, 2.50-3.49=Occasionally, 1.50- 2.49=Rarely and 1.00-1.49 = Never

The above Table revealed that Islamic Studies undergraduates in Kwara State demonstrated an occasional utilisation of AI tools, with a grand mean of 3.08. The highest utilisation was recorded in the use of AI tools for writing and editing assignments (3.26), followed by their application in academic or project-related research (3.14). The lowest utilisation was observed in the use of AI tools for plagiarism checking and paraphrasing (2.87). Similarly, utilisation for Arabic and Islamic terminologies (3.05) and academic data analysis (3.06) also fell within the occasional utilisation category. These findings suggested that while students occasionally employ AI tools across academic activities, they are more inclined to use them for writing and assignment support than for research data analysis or plagiarism checking.

### Testing of the Hypotheses

Hypotheses in this study were tested to determine the statistical significance of observed differences among variables. Specifically, the study employed independent sample t-tests to examine differences in AI awareness and utilisation based on gender and institution types. The null hypotheses was tested at the 0.05 level of significance, and decisions were based on the p-value obtained from the analysis.

***H<sub>01</sub>*:** There is no significant difference between male and female Islamic Studies undergraduates' level of awareness of AI tools for academic and research purposes in Kwara State.

**Table 4:** Significant Difference between Male and Female Islamic Studies Undergraduates' Level of Awareness of AI Tools.

Gender	N	Mean	Std. Deviation	Df	t.cal	p-value	Decision
Male	163	16.34	2.87	238	.885	.377	Accepted
Female	77	15.99	2.84				

p > 0.05

The result in table above showed that  $t(238) = 0.885$ ,  $p = 0.377$  ( $p > 0.05$ ). Since the p-value is greater than the 0.05 significance level. Therefore, the stated null hypothesis is accepted. This implies that there is no significant difference between male and female Islamic Studies undergraduates in their level of awareness of AI tools for academic and research purposes in Kwara State.

***H<sub>02</sub>*:** There is no significant difference between male and female Islamic Studies undergraduates' level of AI tools utilisation for academic and research purposes in Kwara State.

**Table 5:** Significant Difference between Male and Female Islamic Studies Undergraduates' Level of Utilisation of AI Tools.

Gender	N	Mean	Std. Deviation	Df	t.cal	p-value	Decision
Male	163	15.60	3.13	238	1.543	.124	Accepted
Female	77	14.89	3.72				

P > 0.05

The result in the Table above showed that  $t(238) = 1.543$ ,  $p = 0.124$  ( $p > 0.05$ ). Since the p-value is greater than the 0.05 level of significance, the null hypothesis is accepted. This indicated that there is no significant difference between male and female Islamic Studies undergraduates in their level of utilisation of AI tools for academic and research purposes in Kwara State.

***H<sub>03</sub>*:** There is no significant difference in the level of awareness of AI tools for academic and research purposes among Islamic Studies undergraduates in public and private universities in Kwara State.

**Table 6:** Significant Difference in the Level of Awareness of AI Tools among Islamic Studies Undergraduates in public and private Universities in Kwara State.

Institution type	N	Mean	Std. Deviation	Df	t.cal	p-value	Decision
Public Universities	120	16.25	2.89				
				238	.135	.893	Accepted
Private Universities	120	16.20	2.86				

p > 0.05

The result in above Table showed that  $t(238) = 0.135$ ,  $p = 0.893$  ( $p > 0.05$ ). Since the p-value is greater than the 0.05 level of significance, the null hypothesis is accepted. This implies that there is no significant difference in the level of awareness of AI tools between Islamic Studies undergraduates in public and private universities in Kwara State.

***H<sub>0</sub>***: There is no significant difference in the level of utilisation of AI tools for academic and research purposes among Islamic Studies undergraduates in public and private universities in Kwara State

**Table 7:** Significant Difference in the Level of Utilisation of AI Tools among Islamic Studies Undergraduates in public and private Universities in Kwara State.

Institution type	N	Mean	Std. Deviation	Df	t.cal	p-value	Decision
Public Universities	120	15.48	3.56				
				238	.443	.658	Accepted
Private Universities	120	15.28	3.13				

p > 0.05

The result in Table 10 indicated that  $t(238) = 0.443$ ,  $p = 0.658$  ( $p > 0.05$ ). Since the p-value is greater than the 0.05 level of significance, the null hypothesis is accepted. This means that there is no significant difference in the level of utilisation of AI tools between Islamic Studies undergraduates in public and private universities in Kwara State.

## Discussion of Findings

The findings of this study revealed a moderate level of awareness of AI tools among Islamic Studies undergraduates in Kwara state. It indicated that while students were familiar with tools such as ChatGPT, Grammarly, and Google Translate, their awareness of other AI-based educational tools such as plagiarism detectors and intelligent tutoring systems was limited. This result is consistent with AbdulRafiu et al. (2024), which found a moderate level of AI awareness among lecturers and students in Kwara State universities. On the other hand, the present finding contracts with the study of Alimi et al. (2021) and Akpan et al. (2024) which respectively found generally low awareness of

AI technologies among undergraduates. The present finding also diverges with the study by Hamzat and Ansah (2025) which reported a high level of AI awareness among undergraduates in Kwara State. The slight contrast with the current study may be due to differences in study populations; while Hamzat and Ansah surveyed students from various faculties, this study focused specifically on Islamic Studies undergraduates, who may have less exposure to digital tools integrated into their curriculum.

The analysis of this study showed that Islamic Studies undergraduates occasionally use AI tools for academic purposes. The highest use was for writing and editing assignments, while plagiarism checking and paraphrasing recorded the lowest use. This pattern suggests that students draw on AI mainly where it directly supports assignment production, but do not yet depend on AI regularly across wider research or specialist tasks.

AbdulRafiu et al. (2024) found moderate awareness but low utilisation among lecturers and students in Kwara State, a result that is in line with the present study's moderate awareness yet only occasional use. Alimi et al. (2021) similarly reported limited awareness and that access constrained students' exploration and use of AI tools, a logic that helps explain why utilisation here remains occasional rather than frequent. Akpan et al. (2024) also reported low awareness paired with only moderate preparation, which can restrict routine use of AI in academic tasks.

The findings from the independent samples t-test analysis indicated no significant difference in the level of AI awareness between male and female Islamic Studies undergraduates. This means that both male and female students are almost equally aware of AI tools such as Grammarly, ChatGPT, and Turnitin for academic and research purposes. This result corroborates the findings of Hamzat and Ansah (2025), who also reported no significant gender difference in AI awareness and readiness among university students in Kwara State. Similarly, Fomsi and Okpara (2024) found minimal gender differences in students' attitudes toward AI, with both males and females showing comparable levels of engagement and positive perception. However, the result contrasts with Akpan et al. (2024) and Ogunbodede et al. (2022), which respectively found that male students tended to engage with digital and AI tools than their female counterparts.

The t-test analysis revealed no significant difference between male and female Islamic Studies undergraduates in their utilisation of AI tools. This suggests that both genders engage similarly in using AI applications for learning, writing, translation, and research-related tasks. This finding aligns with the work of Hamzat and Ansah (2025), which also found no significant gender differences in AI utilisation and readiness. It also agrees with Fomsi and Okpara (2024), who reported that students' gender did not meaningfully affect their attitudes or frequency of AI use. However, the result diverges from Akpan et al. (2024) and Ogunbodede et al. (2022), which identified higher digital engagement among males.

Results from the independent samples t-test revealed no significant difference in the level of AI awareness between students from public and private universities. This implies that institutional type does not influence how well Islamic Studies undergraduates are informed about available AI tools. This finding supports the study of Hamzat and Ansah (2025), which found no significant difference in AI awareness between students from private and public universities in Kwara State. Similarly, Abubakar et al. (2024) observed that both public and private university students in North Central Nigeria exhibited moderate awareness of AI technologies, although exposure and institutional policies varied.

The independent samples t-test result revealed no significant difference in AI tool utilisation between undergraduates in public and private universities. This indicates that institutional ownership type does not significantly determine how students use AI tools for their academic or research tasks. This finding agrees with the work of AbdulRafiu *et al.* (2024), which revealed a generally low level of AI utilisation among university students in Kwara State irrespective of institution type. Similarly, Asongo (2024) found that while AI awareness differed slightly across programs, utilisation patterns were relatively consistent across institutions. The present study also aligns with Suleiman (2024), who emphasized that AI usage among Nigerian students is more influenced by individual digital competence and perceived usefulness than by institutional factors. This suggests that regardless of institutional ownership, access to AI tools, stable internet, and personal motivation play a greater role in determining AI usage levels among students.

## **Recommendations**

Based on the findings of the study, the following recommendations are made:

- i. Universities should organize AI awareness seminars, and digital literacy workshops, specifically designed for Islamic Studies undergraduates.
- ii. Universities should improve internet infrastructure and ensure stable access to online learning resources to encourage more frequent AI utilisation.
- iii. Lecturers should integrate AI-supported learning tools into teaching, especially for writing, translation, and research to model appropriate academic use for students.
- iv. Departments should collaborate with ICT units to conduct training on ethical and practical AI use regardless of students' gender.
- v. Public and private universities should collaborate through joint AI learning initiatives, ensuring equitable exposure and skill development for all students.

## **Conclusion**

Based on the findings of this study, it is concluded that Islamic Studies undergraduates in Kwara State possess a moderate level of awareness and occasional extent of utilisation of Artificial Intelligence (AI) tools for academic and research purposes. The study further concludes that gender and institution type do not significantly influence the level of AI awareness or utilisation among Islamic Studies undergraduates.

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