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Awareness, and Utilization of Artificial Intelligence (AI) Among Public Secondary School Counsellors in Sokoto Metropolis, Sokoto State, Nigeria

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Abstract

This study examined the awareness and utilization of Artificial Intelligence (AI) among public secondary school counsellors in Sokoto Metropolis, Sokoto State, Nigeria. The study adopted a descriptive survey research design and the population comprised 126 counsellors from public secondary schools in Sokoto Metropolis, while 40 respondents were selected using a stratified random sampling technique. A structured questionnaire titled "Counsellors' Awareness and Utilization of Artificial Intelligence (CAAUAIQ)" was used for data collection. The instrument was validated by experts in education and pilot tested on 30 counsellors, teachers, and administrators outside the study area, yielding a reliability index of 0.87. Data collected were analyzed using descriptive and inferential statistics. The findings revealed a strong positive and statistically significant relationship between counsellors' level of AI awareness and their extent of AI utilization. The results further showed significant differences between counsellors' awareness and utilization of AI in counselling practices, and in their perceptions of the benefits of AI adoption based on demographic factors such as gender, years of experience, and school type. The study recommended that the Ministry of Education and school management should organize continuous professional development workshops and seminars to enhance counsellors' knowledge, awareness, and competencies in AI tools. Educational authorities should ensure adequate provision and accessibility of AI-based counselling technologies, while institutions should establish mentorship systems for effective peer learning.

Keywords*:* Artificial Intelligence, Awareness, Utilization and AI Adoption

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Introduction

First and foremost, the integration of AI in educational counselling represents a particularly promising frontier, offering opportunities to revolutionize how school counsellors support student academic, career, and personal-social development. AI-powered tools can assist counsellors in various capacities, including student assessment and screening, personalized intervention recommendations, resource allocation optimization, and data-driven decision making (Goksel & Bozkurt, 2019). Furthermore, AI technologies such as chatbots and virtual assistants can provide 24/7 student support, supplement counsellor availability, and enhance accessibility to counselling services.

Therefore, Nigeria, as Africa's most populous nation with over 200 million people, faces significant challenges in providing adequate educational support services, particularly in the area of school counselling. The country's educational system serves millions of students across primary, secondary, and tertiary levels, yet the counsellor-to-student ratio remains inadequate to meet the growing demand for guidance and counselling services (Adeyemo, 2020). This situation is particularly acute in northern states like Sokoto, where educational infrastructure and human resources often lag behind national averages.

Awareness serves as the foundation of the framework. Counsellors' knowledge and understanding of AI concepts, tools, and applications influence their readiness to consider AI as part of professional practice. Without awareness, other variables cannot be meaningfully engaged.

Utilization: is the outcome variable, reflecting the actual integration of AI into counselling practice. It depends on the interaction of the other three variables: counsellors must first be aware of AI, have access to available tools, and hold positive perceptions of AI's benefits before utilization can occur at scale.

Additionally, the Technology Acceptance Model (TAM) provides a theoretical framework for understanding how individuals adopt new technologies, emphasizing the roles of perceived usefulness and perceived ease of use in determining technology acceptance and utilization (Davis, 1989). This model, along with Diffusion of Innovation Theory, offers valuable insights into the factors that influence AI adoption among school counsellors of Sokoto metropolis Sokoto state, Nigeria.

In Sokoto State, and specifically in Sokoto metropolis, anecdotal observations suggest that most public secondary school counsellors rely predominantly on traditional counselling methods such as face-to-face sessions, manual record keeping, and paper-based guidance materials. The degree to which they are aware of AI tools, the extent to which they utilize them, and their perceptions of the benefits and challenges of AI adoption remain largely undocumented, this gap is concerning because counsellors are key agents of student support, and their effectiveness could be enhanced by AI-based tools that provide accurate, timely, and individualized services.

Mutisya and Rotich (2021) examined "Integration of Artificial Intelligence Applications in Kenyan Secondary Schools: Teachers' Awareness and Challenges." The study aimed to establish the awareness and challenges teachers face in adopting AI applications for teaching. Findings revealed that teachers were moderately aware of AI but reported low levels of utilization due to poor availability of tools, inadequate training, and policy gaps.

Olayemi and Olawale (2020) carried out a study titled *"Teachers' Awareness and Readiness for Artificial Intelligence Integration in Secondary Education in Nigeria."* The purpose was to investigate teachers' awareness, readiness, and challenges towards AI adoption in classrooms. Findings showed that while most teachers were aware of AI concepts, their readiness and utilization were low, primarily due to unavailability of AI tools and lack of training. The study concluded that awareness without availability and training cannot lead to utilization.

Adu and Adetimirin (2019) carried out a study titled *"ICT Awareness and Use for Teaching among Pre-Service Teachers in Nigerian Universities."* The purpose was to examine awareness and utilization of ICT resources for academic work among future teachers. Findings revealed that while ICT awareness was high, actual utilization was limited due to poor infrastructure and inadequate institutional support. The study concluded that infrastructural availability influences utilization, not just awareness. It recommended improved ICT infrastructure and training to enhance ICT adoption. Its strength lies in directly linking awareness to utilization, which aligns with the focus of this dissertation. Its weakness, however, is that it addressed general ICT rather than AI-specific tools and excluded the counselling context.

Afolabi and Olatunji (2020) conducted a study titled *"Teachers' Perception and Awareness of Artificial Intelligence in Secondary Education in Oyo State, Nigeria."* The purpose was to examine awareness levels and perceived benefits of AI adoption. Findings revealed moderate awareness of AI concepts but limited understanding of its applications in teaching and counselling. Teachers perceived AI as beneficial for personalized learning but expressed concerns about job displacement. The study concluded that awareness must be deepened for effective AI integration.

Furthermore, the literature reveals a research gap: while there are global and national studies on AI in education, very few studies have focused on school counsellors in Nigeria, particularly in Northern states such as Sokoto. Most available research tends to emphasize ICT use in teaching and learning (e.g., Yusuf & Oyediran, 2021) rather than its adoption in counselling services. This creates a critical vacuum in knowledge for policymakers and practitioners who need evidence-based insights on how to support counsellors in AI integration.

The absence of localized studies has practical consequences. Without empirical data on counsellors' awareness, training needs, utilization, and perceptions of AI, Sokoto State risks missing opportunities to align school counselling services with global technological trends. This could perpetuate existing challenges such as poor student guidance on career paths, inefficient record-keeping, limited access to psychosocial support, and the inability to meet students' evolving needs in a digital society.

Therefore, this study is necessary to fill the gap by systematically investigating the awareness, utilization, training and support needs, as well as perceptions of AI adoption among public secondary school counsellors in Sokoto metropolis. The findings will provide relevant insights for policymakers, educational planners, and stakeholders to design targeted interventions that bridge the gap between policy intentions and practice, ultimately enhancing the quality of guidance and counselling services in Nigerian schools.

Objectives of the Study

The following research Objectives were formulated as guide to the study:

I. Examine the current level of AI awareness among public secondary school counsellors in Sokoto metropolis.

II. Examine counsellors' perceptions of the benefits of AI adoption in school counselling.

Research Questions

The following research questions were formulated as guide to the study;

I. What is the current level of AI awareness among public secondary school counsellors in Sokoto metropolis?

II. What are the counsellors' perceptions of the benefits of adopting AI in school counselling?

Methodology

The study employed a descriptive survey research design. The design is considered appropriate because the study seeks to obtain factual information from a representative sample of public secondary school counsellors on their awareness, availability, and utilization of artificial intelligence (AI) in Sokoto metropolis. The target population of the study comprised of all public secondary school counsellors in Sokoto metropolis, Sokoto State, Nigeria. According to the Sokoto State Ministry of Education (2024), there are approximately 42 public secondary schools within Sokoto metropolis, each having at least one designated counsellor, making the estimated population of counsellors 42.

The study employed a stratified random sampling technique, ensuring representation across gender, years of experience, and school location (urban and peri-urban). This method is chosen to enhance the generalizability of findings and reduce sampling bias.

The study used a structured questionnaire as the main instrument for data collection. The reliability of the instruments was established through a pilot study. 30 questionnaire was administered twice to counsellor, teachers, and administrators to schools in Kebbi State at a two-week interval. The correlation coefficient between the test and re-test was r = 0.862, was obtained.

The data collected was analyzed using both descriptive and inferential statistics: for Descriptive statistics (mean, frequency, percentage, and standard

deviation) was used to answer the research questions. And for Inferential statistics such as Chi-square test of independence and t-test was employed to test the research hypotheses at 0.05 level of significance.

Result

Research Question One: What is the current level of AI awareness among public secondary school counsellors in Sokoto metropolis?

Table 1: Current level of AI awareness among public secondary school counsellors in Sokoto metropolis

S/no	Item Statement	SA	A	D	SD	Mean	Std. Deviation
1	I am aware of what Artificial Intelligence (AI) means in the context of education.	20	11	5	4	3.18	1.010
2	I know how AI can be applied in school counselling practices.	24	12	1	3	3.43	.874
3	I am aware of specific AI tools used in counselling (e.g., predictive analytics, adaptive learning software)	24	11	2	3	3.40	.900
4	I have received training or orientation on the use of AI in counselling.	23	11	4	2	3.38	.868
5	I am familiar with how AI can assist in identifying students' academic, career, and emotional needs.	21	12	4	3	3.28	.933
	Grand Mean					3.33	.917

Key: Strongly Agree =SA, Agree = A, Disagree =D, Strongly Disagree =SD
Source: Fieldwork, 2025

Decision Rule: In this analysis the critical mean is 2.50 by this definition, any descriptor statement for which a mean score of more than 2.50 is observed denotes agreement of the respondents to what statement curelessly, for any descriptive statement for which a mean score of less than 2.50 is observed is an indication of disagreement respondents to that statement.

Table 1 shows the current level of AI awareness among public secondary school counsellors in Sokoto metropolis. Looking at the results, item 1 was in agreement that they aware of what Artificial Intelligence (AI) means in the context of education with a mean score of 3.18 which is greater than critical mean of 2.50. In item two was in agreement that they know how AI can be applied in school counselling practices with a mean score of 3.43 which is greater than the critical mean of 2.50. Whereas item 3 was in agreement that they are aware of specific AI tools used in counselling (e.g., predictive analytics, adaptive learning software) with a mean score of 3.40 which is greater than the critical mean of 2.50. Item 4 was in agreement that they have received training or orientation on the use of AI in counselling with a mean

score of 3.38 is greater than the critical mean of 2.50. Item 5 was in agreement that they are familiar with how AI can assist in identifying students' academic, career, and emotional needs with a mean score of 3.28 which is greater than the critical mean of 2.50. The above analysis implies that, majority of the respondents were in agreement that there is a high level of AI awareness among public secondary school counsellors in Sokoto metropolis with a grand mean of 3.33 against a critical mean of 2.50.

Research Question Two: What are the counsellors' perceptions of the benefits of adopting AI in school counselling?

Table 3: Counsellors' perceptions of the benefits of adopting AI in school counselling

S/no	Item Statement	SA	A	D	SD	Mean	Std. Deviation
1	AI can improve the accuracy of diagnosing students' needs.	23	9	5	3	3.30	.966
2	AI reduces the workload of counsellors and saves time.	24	8	4	4	3.30	1.018
3	AI enhances student career decision-making processes.	22	11	4	3	3.30	.939
4	AI strengthens counsellors' ability to provide personalized guidance.	21	10	4	5	3.18	1.059
5	AI has the potential to complement, rather than replace, the role of human counsellors.	20	13	4	3	3.25	.927
	Grand Mean					3.26	.981

Key: Strongly Agree =SA, Agree = A, Disagree =D, Strongly Disagree =SD
Source: Fieldwork, 2025

Decision Rule: In this analysis the critical mean is 2.50 by this definition, any descriptor statement for which a mean score of more than 2.50 is observed denotes agreement of the respondents to what statement curelessly, for any descriptive statement for which a mean score of less than 2.50 is observed is an indication of disagreement respondents to that statement.

Table 4 shows the counsellors' perceptions of the benefits of adopting AI in school counselling. Looking at the results, item 1 was in agreement that AI can improve the accuracy of diagnosing students' needs with a mean score of 3.30 which is greater than critical mean of 2.50. In item two was in agreement that AI reduces the workload of counsellors and saves time with a mean score of 3.30 which is greater than the critical mean of 2.50. Whereas item 3 was in agreement that AI enhances student career decision-making processes with a mean score of 3.30 which is greater than the critical mean of 2.50. Item 4 was in agreement that AI strengthens counsellors' ability to provide personalized

guidance with a mean score of 3.18 is greater than the critical mean of 2.50. Item 5 was in agreement that AI has the potential to complement, rather than replace, the role of human counsellors with a mean score of 3.25 which is greater than the critical mean of 2.50. The above analysis implies that, majority of the respondents were in agreement that there is a level of importance of counsellors' positive perceptions toward the benefits of adopting Artificial Intelligence (AI) in school counselling." with a grand mean of 3.26 against a critical mean of 2.50.

Discussion

This study examines awareness, and utilization of artificial intelligence (AI) among public secondary school counsellors in Sokoto metropolis, Sokoto State, Nigeria. Results were discussed in accordance with the research hypotheses as presented below;

The findings from null hypothesis one (H_{01}) reveal a strong positive and statistically significant relationship between counsellors' level of AI awareness and their extent of AI utilization. This implies that counsellors who possess higher awareness of artificial intelligence tools and their potential applications in school counselling tend to utilize these technologies more effectively in their professional practice. The finding connotes that knowledge and familiarity with AI concepts enhance confidence, competence, and readiness to integrate AI into counselling processes such as data management, career guidance, and emotional assessment. In essence, awareness serves as a precursor to adoption and usage, suggesting that counsellors who understand the benefits and functions of AI are more inclined to leverage it to improve counselling efficiency and outcomes.

This finding corroborates the submission of Viberg *et al.* (2023**)**, that educators' awareness of emerging technologies strongly predicts their intention and willingness to integrate them into teaching and learning practices. Their study emphasized that awareness influences both perceived usefulness and ease of use, which are crucial determinants of technology adoption according to the Technology Acceptance Model (TAM). Similarly, Wang *et al.* (2023**)** reported that school counsellors with higher technological literacy exhibit greater readiness to employ AI-based applications such as predictive analytics and chatbots for student support services. These studies collectively reinforce the idea that awareness is not just informational but transformational it shapes attitudes, builds digital competence, and directly

enhances the practical use of technology in educational guidance and counselling contexts.

Furthermore, the result aligns with the scholarly view of An *et al.* (2023), who posited that the depth of AI awareness among professionals determines the extent of AI-driven innovation within their work environments. They argued that awareness fosters proactive engagement with technological tools, enabling professionals to adapt to the evolving digital landscape. This supports the current finding that counsellors' awareness levels significantly predict their degree of AI utilization. Therefore, the present result integrates with existing literature by confirming that promoting AI awareness through training, workshops, and policy support can substantially enhance the adoption and effective application of AI in school counselling practices. This alignment underscores the critical role of awareness-building initiatives in strengthening counsellors' technological competence and improving the quality of guidance and counselling services in educational institutions.

The findings from null hypothesis two (H_{02}) revealed that there is a significant difference in counsellors' perceptions of the benefits of AI adoption based on demographic factors such as gender, years of experience, and school type. This finding connotes that demographic characteristics play a crucial role in shaping how counsellors view and appreciate the usefulness of AI tools in school counselling. It suggests that differences in exposure, technological familiarity, and institutional environments may influence how various groups of counsellors perceive AI adoption. This aligns with the view of Usman and Bello (2022), that demographic variables, especially gender and years of professional experience, significantly affect educators' acceptance and perception of digital innovations. Hence, the observed difference underscores the need to consider demographic diversity when designing AI-related professional development and capacity-building programmes for counsellors.

Furthermore, this finding corroborates the submission of Afolabi and Olatunji (2020), who found that counsellors' perceptions of emerging technologies are shaped by their workplace setting and experience level. Their study showed that counsellors in urban and technologically advanced schools exhibit more positive attitudes toward AI adoption than those in rural or resource-constrained schools. Similarly, younger counsellors or those with less professional experience tend to show greater enthusiasm for integrating AI tools than their older counterparts, who may be more accustomed to traditional

counselling approaches. This supports the idea that experience and institutional context mediate the extent to which counsellors appreciate the potential benefits of AI, highlighting the need for equitable access to digital infrastructure and inclusive training opportunities across school types.

In addition, the finding integrates and supports the ideas of Yusuf and Ibrahim (2021), who argued that perceptions toward technological innovations in educational settings are not uniform but are influenced by socio-demographic and contextual factors. They maintained that gender dynamics, professional exposure, and organizational culture collectively determine the level of acceptance and perceived benefits of AI among educators and counsellors. In this regard, the significant difference found in this study validates the assertion that demographic factors must be considered when implementing AI adoption strategies in schools. Therefore, the result contributes to the growing body of evidence that individualized and context-sensitive approaches are essential for fostering inclusive and effective AI integration in counselling practices.

Conclusions

Based on the findings of the study, it can be concluded that the integration of Artificial Intelligence (AI) into school counselling practices is significantly influenced by counsellors' level of awareness, access to AI tools, and demographic characteristics. The strong positive and statistically significant relationship between counsellors' awareness of AI and their extent of utilization underscores the importance of knowledge and exposure as key determinants of effective AI application in counselling

Recommendations

Based on the findings of the study, the following recommendations were made;

I. The Ministry of Education and school management organize continuous professional development workshops and seminars aimed at improving counsellors' knowledge, awareness, and competencies in the use of Artificial Intelligence (AI) tools. This will enhance their confidence and effectiveness in integrating AI into counselling practices.

II. Policymakers should promote inclusive training programs that consider these demographic differences, ensuring equitable opportunities for all counsellors to adopt and benefit from AI-driven counselling practices.

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