

**THE IMPACT OF ARTIFICIAL INTELLIGENCE ON RESEARCH
PRODUCTIVITY OF LIBRARY AND INFORMATION SCIENCE
STUDENTS IN EDO STATE**

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**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF
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CERTIFICATION

This is to certify that this study was carried out by Grace Ifunanya EZEANI with Matriculation Number: EDU2102366 in the Department of Educational Management, Faculty of Education, University of Benin, Benin City. It is adequate in scope and quality for the partial fulfillment for the award of the Degree of Bachelor of Arts (Ed) in Library and Information Science.

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DEDICATION

To God Almighty, who is the source of all wisdom, strength and inspiration, and to my parents, who instilled in me the love for learning and the pursuit of excellence, this project is a testament to their guidance and wisdom.

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ABSTRACT

This study examined the impact of Artificial Intelligence on the Research Productivity of Library and Information Science students in Edo State. Five research questions were raised to guide the study. The study employed a descriptive survey research design.

The population of the study comprised of all undergraduate students in the Department of Library and Information Science (LIS), Edo State who are registered and actively enrolled in the 2024/2025 academic session. A sample of 205 respondents was randomly selected and used in the study and they were drawn to represent the entire population. The Instrument for data collection in this study was a structured questionnaire developed by the researcher titled "The Impact of Artificial Intelligence on Research Productivity of Library and Information Science Students in Edo State (TIAIRPQ). The data collected were analyzed using mean ($\bar{x}$), standard deviation (SD) and percentage method.

The findings from the study showed that ChatGPT is the commonly used AI tool by LIS Students. Supporting this finding, Tlili et al. (2023) reported that ChatGPT is widely adopted by university students because it integrates naturally into existing learning workflows without requiring advanced technical skills. Furthermore, it was discovered that the level of Awareness among students regarding ethical issues in AI Assisted Research is high. Based on the findings of the study, it was recommended that Nigerian tertiary institutions offering LIS programmes should formally integrate ChatGPT and similar generative AI tools into information literacy and research methodology courses through guided instructional use.

CHAPTER ONE

INTRODUCTION

Background of the Study

The rapid development of Artificial Intelligence (AI) has brought profound changes to the landscape of academic research, reshaping how information is accessed, processed, synthesized, and communicated. AI encompasses systems and tools driven by machine learning, natural language processing, and advanced data analytics that assist users in performing complex informational tasks more efficiently. Across higher education, AI technologies such as intelligent search engines, automated summarization tools, and machine-assisted data analysis platforms are increasingly integrated into the research workflow, enabling students and scholars to navigate vast bodies of literature, generate insights more quickly, and streamline tasks that were previously manual and time-consuming (Zhang, 2025).

Globally, students depend on the Artificial Intelligence (IA) when they seek information that support them in doing their assignments, research writing and other academic work. Artificial Intelligence (IA) is human intelligence or behaviour demonstrated by machines, an innovative technical framework that encompasses the creation of computer systems with the ability to execute activities that usually need human intellect (Aina, 2023), The term Artificial Intelligence (IA) is a conglomeration of different analytical methods classified as machine learning, neural networks, and deep

learning. Adogbeji and Akporhonor, (2015) opined that Artificial Intelligence (IA) enables students to access relevant and up to date materials for their research work without travelling to other places to source for research materials which could have a great impact on the research outcomes of students, as this enables them to have fast communication with their schoolmates, as well as offer a platform for accessing and publishing papers online.

Boser (2021), stated that the use of artificial intelligence (AI) is already widespread in education. Students across various countries are progressively leveraging artificial intelligence (AI) technology to enhance their writing processes. The benefits of AI in educational circles and research have been well documented in previous studies. For instance, it is stated that AI technology like chatbots is used for review of literature (Clark, 2020), intelligent tutoring and automated data collection, student collaboration and personalization of learning experiences, monitoring progress of a work, automated data collection and analysis (Okada, 2019), profiling respondents' background as well as analysis of data using different statistical packages. Other areas are AI tools like ChatGPT that have the internal capacity to assist students and researchers, in areas which include writing tasks, text generation, language translations, and responding to academic queries. Artificial intelligence (AI) - powered tools offer valuable support in different aspects of writing academic essays, including language correction, grammar checking, and proofreading. These tools help students identify and correct language errors, improving the overall clarity and coherence of their manuscripts (Dale & Viethen, 2021).

Research indicates that AI tools can enhance research efficiency by reducing the time required for comprehensive literature searches, supporting organizational and synthesis functions, and assisting with academic writing and citation management functions that collectively improve productivity in academic work (Zhang, 2025; Madanchian, 2024). Empirical evidence shows widespread adoption of AI among students in academic settings. In a study examining student engagement with AI technologies, over ninety-five percent of respondents reported using AI tools in their academic activities, with many students indicating that these technologies facilitated quicker access to relevant information, improved time management, and supported personalized learning experiences that enhanced their understanding of complex material (Madanchian, 2024). These findings suggest that AI is not merely a supplemental resource but has become an integral part of contemporary academic practice, shaping how students approach research and learning tasks. For students in Library and Information Science (LIS), whose professional focus includes information retrieval, classification, evaluation, and knowledge organization, AI represents both a natural extension of disciplinary practice and a significant opportunity for improving research productivity. AI-enabled tools such as Semantic Scholar, Elicit, and other intelligent discovery platforms help streamline tasks such as literature review, relevance ranking, and identification of seminal works, thereby reducing the cognitive load associated with navigating extensive academic databases (Zhang, 2025). By enhancing efficiency in searching, filtering, and structuring research materials, these technologies align closely

with core LIS competencies, offering students practical means to accelerate and refine their research processes.

In the context of Edo State, where multiple tertiary institutions offer LIS programmes, understanding how AI affects student research productivity is crucial for curriculum development, library training initiatives, and institutional policy formulation. A localized investigation can reveal how students interact with AI tools in real research environments, how these interactions influence the speed and quality of research outputs, and what challenges such as ethical concerns and disparities in access may arise. As AI continues to transform academic environments globally, empirical evidence from Edo State will provide relevant insights into how LIS students can be better equipped to leverage AI responsibly and effectively to meet the demands of modern research practice (Zawacki-Richter, Marín, Bond, & Gouverneur, 2019).

Statement of the Problem

Despite the rapid proliferation of Artificial Intelligence (AI) tools in academic environments, there remains a significant gap in empirical research on how these technologies affect the research productivity of Library and Information Science (LIS) students, particularly in regions like Edo State, Nigeria. AI applications such as intelligent search engines, automated literature review assistants, citation managers, generative AI platforms (for example, ChatGPT, Google Bard), and data analytics software are now widely available and increasingly adopted by students to support

research activities (Zhang, 2025; Madanchian, 2024; Khan, Mehmood & Irshadullah, 2025). Studies have shown that AI tools can enhance academic performance by facilitating literature searches, summarizing content, managing references, and automating repetitive tasks, which may improve research efficiency and productivity (Mughal & Farooq, 2025; ScienceDirect, 2025).

However, evidence regarding the actual impact of these tools on measurable research outcomes among LIS students remains limited. While students report frequent use of AI for research tasks, it is not yet clear whether such use translates into higher quality outputs, faster completion of research projects, or improved adherence to ethical research standards (Ayo & Cudiamat, 2025; Mazaheriyani & Nourbakhsh, 2025). Existing studies also highlight potential challenges, including over-reliance on AI tools, ethical concerns such as plagiarism, uneven access to digital resources, and insufficient institutional guidance (Filimonovic, Rutzer & Wunsch, 2025; Mazaheriyani & Nourbakhsh, 2025). These challenges underscore the importance of localized research to determine how AI is adopted and utilized in real academic contexts.

The lack of empirical evidence is particularly critical for LIS education in Edo State, where students are expected to develop competencies in information retrieval, knowledge organization, critical evaluation, and scholarly communication. Without a clear understanding of the role of AI in research productivity, educators and librarians are limited in their ability to design effective training programs, update curricula, or develop

policies that ensure responsible and productive use of AI tools (Madanchian, 2024). Addressing these gaps is essential not only for enhancing student productivity and research quality but also for guiding institutional policies and resource allocation in the face of rapid technological change. Consequently, this study seeks to examine how AI tools affect the efficiency, quality, and ethical conduct of research among LIS students in Edo State, providing evidence to inform training, policy development, and curriculum design in LIS education.

Objectives of the Study

The main objective of this study is to examine the impact of Artificial Intelligence on the Research Productivity of Library and Information Science students in Edo State. The specific objectives are to:

1. To identify the AI tools commonly used by Library and Information Science students in Edo State for research tasks.
2. To assess the effect of AI tools on the efficiency of research activities by LIS students in Edo State
3. To evaluate the influence of AI on the quality of students' research outputs by LIS students in Edo State
4. To examine awareness of ethical issues in AI-assisted research by LIS students in Edo State

5. To examine the challenges LIS students, encounter when using AI tools in their research in Edo State

Research Questions

The following research questions will guide the course of this study:

1. What AI tools are most commonly used by LIS students in Edo State for research?
2. How does the use of AI tools affect the efficiency of research activities?
3. To what extent does AI usage improve the quality of research outputs?
4. What is the level of awareness among students regarding ethical issues in AI-assisted research?
5. What challenges do LIS students encounter when using AI tools in their research?

Hypothesis

Research question four was hypothesized and will be tested at 0.05 level of significance

There is no significant difference between the level of awareness among students regarding ethical issues in AI-assisted research

Significance of the Study

This study is significant for several reasons. For students, it provides guidance on the effective and ethical use of Artificial Intelligence (AI) tools to enhance research productivity, improve time management, and support the production of high-quality academic outputs. For academic libraries, the findings will help in planning and implementing training programs, acquiring and providing relevant AI resources, and offering user support that aligns with contemporary research practices. Educators and policymakers will also benefit from the study, as it offers evidence to inform curriculum development, the integration of AI literacy into LIS programs, and the formulation of policies that ensure responsible and productive adoption of AI in academic research. Finally, the study will contribute to scholarly knowledge by filling a gap in the literature regarding the use of AI in Library and Information Science education in Edo State, thereby providing a foundation for future research and practical interventions in the field.

Scope of the Study

The study focuses on LIS students in tertiary institutions in Edo State, examining AI use in research tasks such as literature search, data analysis, and writing support. The study is limited to students' experiences within the current academic session and does not cover AI technical design or its use in other disciplines.

Operational Definition of Terms

Artificial Intelligence (AI): Computer systems or software performing tasks requiring human intelligence, used here for research support.

Ethical Use: Adherence to academic integrity when using AI, including proper citation and avoidance of plagiarism.

Library and Information Science (LIS) Students: Individuals enrolled in LIS programs in Edo State tertiary institutions.

Research Productivity: Measurable outputs and efficiency of research tasks, including quality of literature reviews, data analysis, and time management.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviewed the related literature of the study under the following subheadings:

- Artificial Intelligence in Library and Information Science
- AI Tools and Their Role in Research Productivity
- Theoretical Frameworks on AI Adoption in Education
- Ethical Considerations in AI-Assisted Research
- Empirical Review Headings
- Impact of AI on Research Efficiency and Output Quality.
- Challenges Faced by LIS Students in Implementing AI Tools
- Review of Related Literatures

Artificial Intelligence in Library and Information Science

Artificial Intelligence (AI) has emerged as a transformative force in academic research, reshaping how scholars conduct, analyze, and communicate research across disciplines. At its core, AI encompasses computational systems capable of performing tasks that typically require human intelligence, including natural language processing, machine learning, and predictive modeling. In academic contexts, AI tools are increasingly integrated into research workflows to assist with literature discovery, data analysis, academic writing, and the synthesis of complex information Cheng Zhang

(2025). For instance, recent studies demonstrate that AI platforms help researchers process large bodies of literature more efficiently by automating repetitive tasks such as searching, summarizing, and categorizing scholarly works significantly reducing the time required for comprehensive literature reviews García-Peñalvo, F. J. (2024).

The rise of generative AI exemplified by large language models like ChatGPT has further expanded academic capabilities, offering advanced functionality for generating drafts, shaping arguments, and formulating research ideas. Systematic reviews of generative AI applications in research contexts reveal that these tools not only enhance workflow efficiency but also provide cognitive support in planning, drafting, and refining scholarly outputs, particularly in postgraduate research Hodari et al. (2025), this is not accepted. Empirical evidence shows that researchers increasingly adopt AI throughout the research lifecycle, from proposal development to manuscript writing and revision, highlighting the growing reliance on AI for both foundational and advanced research tasks García-Peñalvo & Vázquez-Ingelmo (2025)

Despite the clear benefits, the integration of AI into academic research also presents significant challenges and ethical considerations. Concerns about the integrity of AI-generated content, including issues of accuracy, authorship attribution, and unintended bias in outputs, have become central topics in scholarly debates. Researchers have documented that while AI tools can accelerate writing and streamline research processes, they also risk diminishing the depth of critical thinking and originality if used

indiscriminately, and highlight the need for rigorous ethical guidelines to govern their use (García-Peñalvo, 2025; Kasneci et al., 2025). Furthermore, barriers such as unequal access to advanced AI tools, insufficient training, and limited institutional support impede equitable adoption across research communities (Bianchini et al., 2025). Overall, the integration of AI in academic research represents a significant paradigm shift offering unprecedented opportunities to advance research productivity and innovation while simultaneously demanding careful attention to ethical standards, researcher training, and equitable access. As AI continues to evolve, understanding its role within scholarly practices is essential for shaping research methodologies and educational frameworks that harness AI's potential while safeguarding the core values of academic inquiry.

AI Tools and Their Role in Research Productivity

The use of Artificial Intelligence (AI) tools has become increasingly prevalent among students to support and enhance their research activities. These tools span a wide range of functions, including literature search, data analysis, reference management, writing assistance, and content generation. Intelligent search engines such as Google Scholar, Semantic Scholar, and Microsoft Academic employ AI algorithms to retrieve, rank, and recommend relevant scholarly literature efficiently, allowing students to access high-quality resources while minimizing the time spent on manual searches (Zhang et al., 2024; Wang & Lo, 2021). Automated literature review assistants such as Elicit and Iris.ai support students by summarizing key findings, identifying research gaps, and mapping

relevant studies to research questions, particularly in graduate and postgraduate research (García-Peñalvo, 2024; Mughal & Farooq, 2025).

In addition to search and review tools, reference management software such as Zotero, Mendeley, and EndNote have integrated AI features that automate citation generation, detect duplicate references, and suggest related articles, thereby streamlining the organizational aspects of research (Khan, Mehmood & Irshadullah, 2025). Writing and content-enhancement tools powered by AI, including Grammarly, QuillBot, and ChatGPT, assist students in drafting research documents, improving grammar, suggesting stylistic enhancements, and even generating preliminary content outlines based on user prompts. These tools not only improve writing quality but also contribute to efficiency, allowing students to focus on higher-order analytical and interpretive tasks (Frontiers in Education, 2025; Filimonovic, Rutzer & Wunsch, 2025).

Despite their growing popularity, the adoption of AI tools varies across students due to factors such as digital literacy, institutional access, and awareness of tool capabilities. Some studies note that students may underutilize available AI tools or rely on them inconsistently, which can limit the potential benefits to research productivity (Ayo & Cudiamat, 2025; Mazaherian & Nourbakhsh, 2025). Moreover, ethical considerations such as proper attribution, avoidance of plagiarism, and responsible use of AI-generated content remain critical issues that influence how students interact with these tools. Overall, the integration of AI tools into student research workflows represents a

paradigm shift in academic practices, offering unprecedented support for efficiency, quality, and accessibility in scholarly work, while simultaneously necessitating attention to training, guidance, and ethical use.

Theoretical Frameworks on AI Adoption in Education

Impact of AI on Research Efficiency

The impact of Artificial Intelligence (AI) on research efficiency has attracted increasing scholarly attention, particularly as academic research becomes more data-intensive and digitally mediated. Research efficiency generally refers to the ability to complete research tasks accurately within shorter time frames, with optimal use of cognitive and material resources. Several international studies indicate that AI significantly enhances research efficiency by automating routine tasks such as literature searching, data cleaning, reference management, and language editing, thereby enabling researchers and students to focus on higher-order analytical activities (Madanchian & Taherdoost, 2025; Zhang, 2025). AI-driven search engines and literature-review assistants have been shown to reduce the time spent identifying relevant scholarly works while improving recall and precision in information retrieval (Vieriu, 2024; Mughal & Farooq, 2025).

Empirical evidence further demonstrates that generative AI tools contribute to faster drafting and structuring of academic texts, which positively affects research turnaround time. Filimonovic, Rutzer, and Wunsch (2025) found that early-career researchers who

used generative AI for drafting, summarization, and coding completed research tasks more quickly and reported lower cognitive workload, without significant reductions in output quality when AI use was properly guided. Similarly, studies published in *Frontiers in Education* indicate that AI dependence, when moderated by strong research skills and ethical awareness, has a statistically significant positive effect on students' research productivity and efficiency (Buniel, 2025). These findings suggest that AI's efficiency gains are not automatic but are mediated by user competence and institutional support.

In the African and Nigerian context, emerging literature also supports the efficiency-enhancing role of AI in academic research, although such studies remain limited in number. A study by Ayo and Cudiamat (2025) reported that Nigerian university students who used AI-powered tools for academic writing and information retrieval experienced improved time management and faster completion of research assignments. Similarly, Ogunniyi, Ojo, and Adegbite (2024) found that postgraduate students in Nigerian universities used AI-enabled tools such as Grammarly, Google Scholar, and citation generators to improve writing accuracy and reduce the time spent on editing and formatting research work. These studies highlight that even basic AI tools can yield significant efficiency benefits in contexts where research support resources are limited. However, African-focused studies also emphasize structural and contextual challenges that may limit AI's efficiency gains. Unequal access to stable internet connectivity, limited institutional subscriptions to advanced AI tools, and insufficient training in AI literacy have been identified as barriers to effective use (Ogunbodede &

Popoola, 2023; Ayo & Cudiamat, 2025). In Library and Information Science education specifically, scholars argue that while AI aligns strongly with LIS competencies such as information retrieval and knowledge organization, the absence of structured training can lead to superficial use that does not fully translate into productivity gains (Adebayo & Salaam, 2024). This reinforces the need for localized empirical studies to assess how AI influences research efficiency within specific institutional and disciplinary contexts.

Overall, the literature suggests that AI has strong potential to enhance research efficiency by accelerating information retrieval, reducing time spent on routine research tasks, and supporting academic writing. Nonetheless, the magnitude of these benefits depends on contextual factors such as training, ethical awareness, access to resources, and disciplinary relevance. Given the limited number of empirical studies focusing on LIS students in Edo State, Nigeria, there remains a clear need for focused research to determine how AI tools affect research efficiency in this specific educational and regional context.

Ethical Considerations in AI-Assisted Research

The growing integration of Artificial Intelligence (AI) into academic research has raised significant ethical concerns that have become central to scholarly discourse. Ethical considerations in AI-assisted research broadly relate to issues of academic integrity, authorship, transparency, bias, data privacy, and responsible use. Scholars argue that while AI tools can enhance research productivity, their unregulated or uninformed

use poses risks to the credibility and integrity of academic work (Floridi & Cowls, 2020). In higher education contexts, especially among students, these concerns are heightened due to limited awareness of ethical boundaries and institutional guidelines governing AI use.

One major ethical issue concerns academic integrity and plagiarism. AI-powered writing and paraphrasing tools can generate text that appears original, making it difficult to distinguish between a student's intellectual contribution and machine-generated content. Studies have shown that excessive reliance on generative AI may blur authorship boundaries and undermine the development of critical thinking and scholarly writing skills (Perkins, Roe, & McGovern, 2023). According to the Committee on Publication Ethics (COPE, 2023), failure to disclose AI assistance in research writing violates principles of transparency and accountability, particularly when AI-generated content substantially influences research outputs. Bias and reliability of AI outputs also present ethical challenges. AI systems are trained on large datasets that may contain cultural, linguistic, or ideological biases, which can be reproduced in research findings if not critically evaluated (Bender et al., 2021). In the context of Library and Information Science, where students are trained to evaluate information sources critically, unexamined AI outputs may lead to the dissemination of inaccurate or biased information. UNESCO (2023) emphasizes that ethical AI use in education requires human oversight, critical evaluation, and contextual awareness to prevent misinformation and epistemic injustice.

Data privacy and confidentiality constitute another ethical concern in AI-assisted research. Many AI tools require users to upload documents, datasets, or personal information to external platforms, raising questions about data ownership and protection. Researchers warn that sensitive research data may be stored, reused, or exposed without users' full awareness, particularly when using free or publicly available AI tools (Zawacki-Richter et al., 2019). This concern is especially relevant for student researchers who may lack adequate knowledge of data protection policies and ethical research standards.

In developing countries such as Nigeria, ethical concerns are further compounded by the absence of clear institutional policies on AI use in academic research. Studies in African higher education contexts indicate that while students increasingly adopt AI tools for academic tasks, ethical awareness and formal guidance remain limited (Adebayo & Salaam, 2024; Ogunbodede & Popoola, 2023). This gap increases the risk of misuse, over-dependence, and unethical research practices. Scholars therefore stress the need for AI literacy education that integrates ethical reasoning alongside technical competence (Holmes et al., 2022). The literature underscores that ethical considerations are integral to the effective use of AI in academic research. While AI tools offer substantial benefits, their ethical use depends on transparency, critical evaluation, respect for intellectual ownership, and adherence to academic standards. For LIS students in Edo State, understanding these ethical dimensions is particularly important, given their future roles as information professionals and custodians of knowledge. Consequently, empirical

investigation into students' awareness and ethical use of AI tools is necessary to inform curriculum development, policy formulation, and responsible AI integration in LIS education.

Impact of AI on Research Efficiency and Output Quality

Empirical studies examining the relationship between Artificial Intelligence (AI) and student productivity within Library and Information Science (LIS) education have grown steadily in recent years, reflecting the increasing penetration of AI technologies into academic research environments. Several empirical investigations suggest that AI tools positively influence dimensions of research productivity among students when appropriately integrated into their research workflows, including improved efficiency, higher quality outputs, enhanced research skills, and timely completion of academic tasks (Lodha, Libaque-Saenz, & Arrawa, 2025). International studies consistently report that AI-powered tools enhance students' ability to retrieve, organize, and synthesize information more efficiently. For example, Mughal & Farooq (2025) found that university students in Pakistan who used AI tools experienced improved academic productivity through better time management and task completion. Research by Sayeedi et al. (2025) indicates that students across diverse disciplines increasingly employ generative AI alongside traditional search tools to aid information retrieval and synthesis. Similarly, a survey of students in Jordanian universities found widespread engagement

with AI tools for academic purposes and a strong perception of their benefits in learning and research activities.

Studies focusing specifically on LIS education highlight the alignment between AI functionalities and core LIS competencies. Buniel (2025), using structural equation modeling, demonstrated that AI dependence had a positive and statistically significant effect on students' research productivity, particularly when moderated by information literacy skills. The study emphasized that LIS students, due to their training in information evaluation, were better positioned to leverage AI tools effectively than students in some other disciplines. This suggests that AI may be especially impactful within LIS programs when integrated alongside traditional information literacy instruction.

In the African and Nigerian context, empirical studies remain relatively limited but are gradually emerging. Ogunbodede and Popoola (2023) examined ICT and AI-enabled tool usage among postgraduate students in Nigerian universities and found a positive relationship between digital tool utilization and research productivity. Although not limited to LIS students, their findings indicated that students in information-related disciplines showed higher productivity gains due to familiarity with information systems and digital research tools. Similarly, Ogguniyi, Ojo, and Adegbite (2024) reported that Nigerian LIS and education students who used AI-supported writing and citation tools experienced improved research output quality and faster completion of academic projects.

More recently, Adebayo and Salaam (2024) conducted a survey-based study on AI adoption in LIS education in Nigeria and found that students who frequently used AI tools such as Grammarly, Google Scholar recommendations, and automated citation generators reported increased confidence and productivity in research-related tasks. However, the study also identified challenges, including limited institutional access to advanced AI tools and insufficient formal training on responsible use. These findings suggest that while AI has the potential to enhance LIS student productivity, contextual factors such as infrastructure and policy significantly influence outcomes. Overall, empirical literature indicates a generally positive relationship between AI use and LIS student research productivity, particularly in terms of efficiency, organization, and quality of outputs. Nevertheless, most existing studies emphasize the need for guided use, ethical awareness, and institutional support to sustain these benefits. The scarcity of localized empirical studies focusing on LIS students in Edo State highlights a significant research gap, reinforcing the relevance of the present study in contributing context-specific evidence to the growing body of literature on AI in LIS education.

Negative Alignments and Challenges of AI Use in LIS Education

While much of the literature highlights the positive impact of AI on research productivity, several studies identify notable negative alignments and challenges associated with its use. Surveys of students indicate that AI tools can lead to over-reliance on technology and diminished critical thinking, with nearly half of respondents

expressing concerns about the accuracy and reliability of AI-generated content in academic tasks (Sitanggang et al., 2025). Research on academic integrity further highlights the potential for plagiarism, ethical misuse, and reduced engagement with authentic learning, even when AI improves efficiency (Xiao et al., 2023). In some international contexts, over-dependence on AI has been linked to reduced development of essential cognitive skills such as problem-solving and critical reasoning, alongside increased risks of academic dishonesty (Mazaheriyani & Nourbakhsh, 2025). Systematic analyses of generative AI in research workflows also underscore broader challenges, including algorithmic bias, hallucinations, lack of transparency, and ethical ambiguity, which can undermine the validity and trustworthiness of academic outputs if AI is not appropriately monitored (Hodari et al., 2025). These findings collectively suggest that while AI has the potential to enhance efficiency, organization, and output quality among LIS students, its integration must be guided by ethical frameworks, institutional support, and training to ensure balanced and responsible use.

Challenges Faced by LIS Students in Implementing AI Tools

Despite the demonstrated benefits of AI tools in enhancing research efficiency and output quality, Library and Information Science (LIS) students face several challenges in effectively integrating these technologies into their academic workflows. One significant barrier is limited access to advanced AI tools and infrastructure, particularly in institutions with constrained technological resources. Empirical studies in

Nigeria and other developing contexts highlight that inadequate access to reliable internet, subscription-based AI software, and compatible devices limits the consistent use of AI tools for literature retrieval, data analysis, and writing assistance (Ogunbodede & Popoola, 2023; Adebayo & Salaam, 2024).

Another challenge is the insufficient training and lack of formal instruction on the responsible and effective use of AI. Many students report relying on self-learning or informal peer guidance when using AI-powered search engines, literature summarizers, and citation management tools, which may lead to suboptimal utilization or misuse of the technology (Ogunniyi, Ojo, & Adegbite, 2024). Closely related to this is the ethical and academic integrity concern, as students often struggle to discern how to incorporate AI-generated outputs without compromising originality, proper attribution, or critical engagement with content (Xiao et al., 2023; Mazaheriyani & Nourbakhsh, 2025).

Further, contextual and institutional factors can impede AI adoption. Limited institutional support, including inadequate policies, lack of structured guidance, and minimal integration of AI tools into curricula, restricts students' ability to fully leverage these technologies (Adebayo & Salaam, 2024). Moreover, over-reliance on AI tools has been associated with reduced critical thinking, problem-solving skills, and analytical depth in research tasks, particularly when students bypass manual evaluation or synthesis of scholarly content (Sitanggang et al., 2025). These challenges suggest that while AI has the potential to enhance LIS student productivity, careful attention to infrastructure,

training, ethical guidance, and pedagogical integration is essential to ensure effective and responsible use.

Review of Related Literatures

Several empirical studies have examined the role of Artificial Intelligence (AI) in enhancing research productivity among students, particularly within information-related and academic disciplines. Madanchian and Taherdoost (2025) investigated the impact of AI on research efficiency among university students and researchers using a quantitative approach. The study revealed that AI tools such as intelligent search engines, automated data analysis software, and writing assistants significantly improved research productivity by reducing the time spent on repetitive tasks like literature searching, data processing, and document formatting. The authors concluded that AI adoption positively influences research efficiency and output quality, although they emphasized that proper training and ethical awareness are essential to maximize its benefits.

Similarly, Vieriu (2024) examined the influence of AI on students' academic development, with particular attention to research-related activities. Using a survey research design, the study found that students who frequently used AI-powered tools including grammar checkers, citation managers, and academic search platforms demonstrated higher levels of research productivity and better-quality academic outputs. The findings indicated that AI tools enhanced students' ability to organize information, synthesize literature, and produce well-structured research work. However, the study also

highlighted concerns regarding over-reliance on AI-generated content and the need for clear ethical guidelines in academic environments.

In the Nigerian context, Ogunbodede and Popoola (2023) explored the relationship between the use of information and communication technologies (ICT), including AI-enabled research tools, and research productivity among postgraduate students in Nigerian universities. The study revealed a significant positive relationship between the use of digital research tools and students' research productivity. Students who actively utilized online databases, automated referencing tools, and digital writing aids completed their research work more efficiently than those who relied on traditional methods. The authors identified infrastructural challenges, limited access to advanced technologies, and inadequate training as major constraints affecting effective technology utilization in Nigerian higher institutions.

These studies provide strong evidence that AI and related digital tools can enhance research productivity by improving efficiency, organization, and quality of academic outputs. For example, empirical research among university students showed that frequent use of AI technologies was associated with perceived improvements in academic task quality and efficiency, even as respondents noted concerns about over-reliance and ethical use (Sitanggang et al., 2025). Systematic reviews of AI in higher education suggest consistent benefits for student learning and research support while also highlighting gaps related to ethical use, infrastructure, and equitable access (Preprints.org,

2025). Further, mixed-methods evidence reveals that despite high AI adoption among students, ethical boundaries and institutional preparedness remain important contextual challenges, pointing to the need for locally grounded research (Mazaheriyani & Nourbakhsh, 2025). The present study builds on these findings by focusing specifically on Library and Information Science students in Edo State, thereby contributing localized empirical evidence to the growing body of literature on AI-assisted research in LIS education.

Summary of Reviewed Literature

This chapter reviewed relevant literature on the impact of Artificial Intelligence (AI) on research productivity, with particular emphasis on Library and Information Science (LIS) students. The review examined key concepts and theoretical perspectives on Artificial Intelligence in academic research, highlighting how AI tools such as intelligent search engines, automated literature review assistants, citation managers, data analysis software, and generative writing tools have transformed research processes in higher education. The literature established that AI has become an integral component of modern academic research, offering opportunities to enhance efficiency, accuracy, and overall research output.

The chapter further reviewed studies on AI tools commonly used by students for research, revealing that many students rely on AI-powered platforms for literature searching, reference management, academic writing support, and data analysis. Empirical evidence from both international and Nigerian studies indicated that the use of these tools contributes positively to research efficiency by reducing the time and effort required to complete research tasks. Studies consistently showed that AI enables students to manage information more effectively and focus on higher-order cognitive activities such as analysis and synthesis. In addition, the review examined the impact of AI on the quality of research outputs. Findings from prior studies suggested that AI tools can improve the organization, clarity, and accuracy of academic work when used responsibly. However,

the literature also emphasized that the quality benefits of AI are dependent on users' information literacy, critical thinking skills, and level of guidance provided by institutions.

Ethical considerations in AI-assisted research were also explored in this chapter. The reviewed literature identified major ethical concerns, including plagiarism, authorship ambiguity, data privacy, bias in AI-generated content, and over-reliance on AI tools. Scholars emphasized the importance of ethical awareness, transparency, and institutional policies to ensure responsible AI use in academic research, particularly among students. Finally, the chapter reviewed empirical studies on AI and LIS student productivity, including international and Nigerian contexts. While most studies reported a positive relationship between AI use and research productivity, gaps were identified in localized empirical evidence, especially concerning LIS students in Edo State. The review therefore established a clear justification for the present study, which seeks to provide context-specific data on how AI influences the efficiency, quality, and ethical conduct of research among LIS students in Edo State.

CHAPTER THREE

METHODOLOGY

This chapter presents the research methodology employed in conducting this study. The methodology is structured under the following subheadings:

- Research Design
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validation of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

Research Design

This study will adopt a descriptive survey research design. This design is appropriate because the research seeks to collect factual, current, and quantifiable information from Library and Information Science (LIS) students regarding their awareness, usage, perceived benefits, and challenges associated with Artificial Intelligence (AI) tools in research production. The survey design enables the researcher to obtain standardized

responses from a large sample and generalize findings to the entire LIS student population in Edo State.

Population of the Study

The population of this study will comprise all undergraduate students in the Department of Library and Information Science (LIS), Edo State who are registered and actively enrolled in the 2024/2025 academic session. This population is targeted because LIS undergraduate students are direct users of the John Harris Library, and their training emphasizes information sourcing, retrieval, and utilization. From the records in the Department of Educational Management (DEM), University of Benin, the LIS undergraduate students programme consists of students from 100 to 400 level, estimated at approximately 420 students while there are 167 LIS students from year one to final years in Delta State University, Abraka. The target population is therefore, 587 LIS students

Sample and Sampling Technique

A sample refers to a subset of elements, individuals, or units selected from a larger population for the purpose of investigation while sampling is the systematic process or technique used by a researcher to select a sample from a population (Creswell, 2014)

To determine the sample size for this study, the Yaro Yamane formula was adopted. The Yaro Yamane formula is a statistical sampling technique that is used to determine sample

sizes in research methodology. It helps to improve the accuracy level in determining the chunk of a population to sample at a reasonable margin of error. It is used to arrive at an appropriate sample size in qualitative and quantitative research. The application of Yaro Yamani formular is shown below

$$n = \frac{N}{1 + N(e)^2}$$

Where n = Sample size

N = Population

e = Margin of error

The margin of error here is taking to be, $e = 5\% = 0.05$.

$$N = 420$$

$$e = 0.05$$

$$n = \frac{420}{1 + 420 (0.05)^2}$$

$$= \frac{420}{1 + 420 (0.0025)}$$

$$= \frac{420}{1 + 1.05}$$

$$n = \frac{420}{2.05} = 204.88$$

Rounded to the nearest whole number = 205. Therefore, the sample for this study is 205 respondents.

Research Instrument

The primary instrument for data collection in this study is a self-structured questionnaire. This instrument is appropriate for collecting a large volume of data efficiently and allows students to respond honestly and privately. The questionnaire is titled: “The Impact of Artificial Intelligence on Research Productivity of Library and Information Science Students in Edo State. The questionnaire is divided into two main sections: Section A: Demographic Information. This section collects personal background data such as age, gender, and years of work experience. Section B consist of the main items of the questionnaire. Each research question is covered by five related items. Respondents will indicate their level of agreement using a 4-point Likert scale: Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD). The use of a Likert scale provides a standardized method for measuring attitudes, opinions, and behaviors.

Validation of the Instrument

The questionnaire went through content and face validation by two library science lecturers. They will review the instrument for clarity, alignment with objectives, and appropriateness of items. Feedback will be used to revise and refine the questionnaire before administration.

Reliability of the Instrument

To ensure internal consistency, a pilot test was conducted with 20 students in Library and Information Science from Delta State University, Abraka. Responses will be analyzed using Cronbach's Alpha, with a reliability coefficient of 0.70 or higher considered acceptable.

Method of Data Collection

The researcher, with the help of trained assistants, administered the questionnaires at selected public libraries. Respondents were informed of the study's purpose and assured of confidentiality. Participation were entirely voluntary, and no incentives or coercion was used. Completed questionnaires was collected on the spot to ensure a high response rate and reduce the chances of data loss or manipulation. Where necessary, assistance was provided in understanding and interpreting the questionnaire items without influencing the participants' answers.

Method of Data Analysis

Data obtained from the questionnaire administered was analyzed using percentage, mean statistics and standard deviation. A critical mean of 2.5 was adopted in line with the rating scale, mean response of 2.5 and above was regarded as Agree while responses receiving mean score less than 2.5 was regarded as Disagree.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter deals with presentation of results and discussion of findings. The results of the analysis are presented in the order of the research questions that guided the study

Presentation of Results

Analysis of Demographic Information

Table 1: Age of Respondents

S/N	Age	Frequency	Percentage (%)
1	16-20	135	65.5%
2	20-30	55	26.5%
3	31-40	15	7.3%
4	41 and above	0	0%
	Total	205	100%

Table 1, responses showed that 66.5% of the respondents were within the ages of 16-20 years, 26.5% were within the age bracket of 20 – 30 years, while 7.3% of the respondents were within the age brackets of 31 - 40 years. Hence, majority of the respondents were within the ages of 16-20 years which means that they are young.

Table 2: Educational Level

S/N	Level	Frequency	Percentage (%)
1	100 Level	55	26.5%
2	200 Level	50	24.3%
3	300 Level	50	24.3%
4	400 Level	50	24.3%
	Total	205	100%

Table 2, responses showed that 26.5% are 100 level students, 24.3% are 200 level

students, 24.3% are 300 level students while 24.3% are 400 level students. Hence, most of the respondents (55) representing 26.5%% were year one students

Data collected to answer the research questions was answered using mean and standard deviation. The result was shown in Table 1-5

Research Question 1: What are the AI Tools Commonly Used by LIS Students?

Table 3: Mean and standard deviation showing the AI Tools Commonly Used by LIS Students

S/N		N	Mean	SD	Remarks
1	I use AI-powered search engines (for example, Google Scholar recommendations, Semantic Scholar) for my academic research	205	3.39	.973	Agree
2	I use AI tools such as ChatGPT or similar platforms to generate research ideas or outlines.	205	3.20	1.15	Agree
3	I use AI-powered citation or reference management tools (e.g., Zotero, EndNote, Mendeley).	205	3.39	.973	Agree
4	I use AI-based grammar or writing assistants (e.g., Grammarly) when preparing research work.	205	3.48	0.96	Agree
5	I have used AI tools at different stages of my research project.	205	2.99	1.26	Agree
6	Research Rabbit is the most used AI tool among students	205	2.10	.810	Disagree
7	Most students use ChatPDF for their researches	205	3.51	.893	Agree
8	I and most of my friends use ChatGPT mostly for every area of our research from choosing topic	205	4.00	.000	Agree
9	Most students do not know about Grammarly and do not use it always	205	3.46	.904	Agree

Table 3 showed that the respondents rated item one, two, three, four, five, seven, eight and nine as agreed with a mean rating ranging from 2.99 to 4.00 while item six was rated

as disagreed with a mean of 2.10. The standard deviation also ranges from 0.00 to 1.174. However, item eight was rated 4.00 which is the highest. With these results, the above mean score shows that ChatGPT is the Commonly used AI tool by LIS Students

Research Question 2: How does the use of AI tools affect the efficiency of Research activities?

Table 4: Mean and standard deviation showing how the use of AI tools affects the efficiency of Research activities

S/N	Item	N	Mean	SD	Remarks
1	AI tools help me locate relevant research materials faster than traditional methods.	205	3.39	.973	Agree
2	The use of AI tools reduces the time I spend on literature review activities.	205	3.12	1.174	Agree
3	AI tools make it easier for me to organize and manage research information.	205	3.39	.973	Agree
4	Using AI tools improves my ability to complete research tasks within a shorter time.	205	2.84	.735	Agree
5	AI tools reduce the stress and workload associated with academic research.	205	2.60	.853	Agree

Table 4 depicted that the respondents rated all the items as agreed with a mean rating ranging from 2.60 to 3.39. The standard deviation also ranges from .735to 1.174. With these results, the above mean score shows that the use of AI tools greatly influences the efficiency of research activities among students.

Research Question 3: To what extent does AI usage improve the quality of research output?

Table 5: Mean and standard deviation showing the extent which AI usage improve the quality of research output

S/N	Item	N	Mean	SD	Remarks
1	AI tools help improve the clarity and structure of my research work.	205	4.00	.000	Agree
2	The use of AI tools improves the overall quality of my academic writing.	205	2.60	.853	Agree
3	AI tools assist me in producing more accurate and well-referenced research outputs.	205	2.84	.735	Agree
4	AI usage enhances my ability to synthesize information from multiple sources.	205	2.99	1.26	Agree
5	Research work completed with the help of AI tools is better than work done without them.	205	3.48	0.96	Agree

Table 5 showed that the respondents rated all the items as agreed with a mean rating from 2.60 and 4.00. The standard deviation also ranges from 000 to 1.26. The result indicates that the above mean score shows that AI usage improves the quality of research output among students to a high extent.

Research Question four: What is the level of Awareness among students regarding ethical issues in AI Assisted Research?

Table 6: Mean and standard deviation showing the level of Awareness among students regarding ethical issues in AI Assisted Research

S/N	Items	N	Mean	SD	Remark
1	I am aware that someone can have injuries when welding is ongoing	205	3.00	.000	Agreed
2	Chemical hazards can occur during welding	205	2.84	.735	Agreed
3	I sometimes get cuts from welding processes	205	2.62	.749	Agreed
4	I know that there can be electric shock during welding	205	3.12	.556	Agreed
5	Sometimes, a welder can inhale fumes and gasses	205	3.28	.668	Agreed

Table 6 showed that the respondents rated all the items as agreed with a mean rating from 2.62 to 3.00. The standard deviation also ranges from 000 to .749. With these results, the above mean score shows that the level of Awareness among students regarding ethical issues in AI Assisted Research is high.

Research Question 5: What challenges do LIS students encounter when using AI tools in their research

Table 7: Mean and standard deviation showing the challenges do LIS students encounter when using AI tools in their research

	Items	N	Mean	SD	Remark
1	Most students are not trained to use AI tools for research	205	3.12	.556	Agreed
2	Some AI tools are not tailored to specific academic disciplines	205	3.28	.668	Agreed
3	Students might depend too much on AI for writing, which can hinder their development of critical thinking and writing skills.	205	2.84	.735	Agreed
4	Some students do not know the right AI to use for their research	205	2.00	.000	Disagreed
5	Some students lack information about the recent AI tools needed for their research activities	205	3.52	.577	Agreed

Table 7 showed that the respondents rated all the items except item 4 as agreed with a mean rating from 2.84 to 3.52. The standard deviation also ranges from 000 to .749. while item four was rated as disagreed with a mean of 2.00 and standard deviation of .000. With these results, the above mean score shows that there are several challenges which LIS students encounter when using AI tools in their research. It includes: Some students lack information about the recent AI tools needed for their research activities and Some students do not know the right AI to use for their research among others.

Testing of Hypothesis

Hypothesis One: There is no significant difference between the level of awareness among students regarding ethical issues in AI-assisted research

Table 8: The t-test analysis showing significant difference between the level of awareness among students regarding ethical issues in AI-assisted research

Respondents	N	Mean	SD	df	t-value	p-value	Decision
Low level of awareness	105	3.26	.328				
				198	.472	.637	Not Significant
High level of awareness	100	3.24	.286				

P-Value Significant at 0.05 level (2-tailed) (Retain Hypothesis) SD: Standard deviation, DF: Degree of freedom

The test of the hypothesis, as presented reveals mean responses of the difference between the level of awareness among students regarding ethical issues in AI-assisted research. Low level of awareness had a mean of 3.26 and high level of awareness had 3.24 while their corresponding standard deviations are .328 and .286. The t-value of .472, at degree of freedom of 198, which shows it was not significant at p-value of .637. Testing at an alpha value of .05, the hypothesis was retained since the p-value is greater than alpha value. Thus, there is no significant difference between the level of awareness among students regarding ethical issues in AI-assisted research

Discussion of Findings

From the first research question, it was discovered that ChatGPT is the Commonly used AI tool by LIS Students. Students use ChatGPT extensively for generating research ideas, formulating problem statements, reviewing literature, and structuring research reports. The tool provides instant responses to academic questions, helps in summarizing journal articles, and offers explanations of complex concepts, which makes it especially valuable in disciplines that require critical analysis and theoretical understanding (Okonkwo, 2021). Its interactive nature allows students to engage in dialogue that supports knowledge building and creativity, thereby improving the quality of research outputs. Research by Kasneci et al. (2023) shows that students across information-related disciplines increasingly rely on ChatGPT for tasks such as literature exploration, idea generation, summarization, and clarification of complex concepts. For LIS students in particular, whose academic activities revolve around information retrieval, organization, and evaluation, ChatGPT provides immediate, conversational access to synthesized information, making it a preferred AI tool over more technical or specialized systems.

Further supporting this finding, Tlili et al. (2023) reported that ChatGPT is widely adopted by university students because it integrates naturally into existing learning workflows without requiring advanced technical skills. Their study highlights that students favor ChatGPT over other AI tools because it supports academic writing, reference explanation, and research planning—core competencies in LIS education.

Similarly, Okonkwo and Ade-Ibijola (2023) observed growing acceptance of generative AI tools in African higher education, noting that ChatGPT is particularly dominant due to its free availability and compatibility with low-resource learning environments, which aligns with the realities of many LIS students in developing contexts. Moreover, studies focusing on students' perceptions reveal that LIS students view ChatGPT as a supportive academic assistant rather than merely a technological novelty. According to Dwivedi et al. (2023), students prefer ChatGPT because it enhances productivity and reduces the time spent on routine academic tasks such as drafting, editing, and concept clarification. This widespread usage reflects a shift in how LIS students engage with information technologies, positioning ChatGPT as a central AI tool in their academic practice. Consequently, the dominance of ChatGPT among LIS students underscores the need for LIS curricula to address ethical use, critical evaluation, and responsible integration of generative AI tools in professional training.

From the second research question, findings showed that the use of AI tools greatly influence the efficiency of research activities among students. The use of artificial intelligence (AI) tools has been shown to significantly enhance the efficiency of research activities among students by automating routine academic tasks and improving access to relevant information. Baker and Smith (2019) argue that AI-driven systems support students by accelerating literature searching, organizing research materials, and providing instant feedback, which collectively improve research efficiency. For students engaged in

academic inquiry, these tools reduce the time spent on manual information processing and allow greater concentration on analysis and interpretation.

Recent studies further confirm that AI tools positively influence students' research productivity and writing effectiveness. Ouyang and Jiao (2021) found that AI-supported academic tools enhance students' ability to structure research papers, refine arguments, and manage references more effectively. Likewise, Holmes, Bialik, and Fadel (2019) reported that students using AI-based learning and research tools complete research tasks faster and with improved coherence compared to those relying solely on traditional research methods.

Additionally, AI tools contribute to improved research efficiency by supporting self-directed learning and adaptive research practices. According to Roll and Wylie (2016), AI-enabled learning technologies promote learner autonomy by offering personalized guidance and real-time support during research activities. However, Williamson and Eynon (2020) caution that while AI tools enhance efficiency, institutions must emphasize ethical use and information literacy to ensure responsible research practices. Overall, the evidence suggests that AI tools substantially influence the efficiency of students' research activities when integrated thoughtfully into academic environments.

From research question three, responses revealed that AI usage improve the quality of research output among students to a high extent. The use of artificial intelligence (AI) tools has been found to significantly improve the quality of research output among students by enhancing accuracy, coherence, and depth of academic work.

Luckin et al. (2016) argue that AI-supported research tools assist students in refining research questions, improving argument structure, and minimizing logical errors, which leads to higher-quality scholarly outputs. By providing intelligent feedback and guidance, AI tools help students produce more rigorous and well-structured research work than traditional methods alone. Studies also show that AI tools contribute to improved quality in academic writing and data analysis. According to Perkins, Salomon, and Taddeo (2020), AI-assisted technologies support students in synthesizing information from multiple sources, detecting inconsistencies, and improving academic language, all of which enhance the credibility and originality of research outputs. Similarly, Graesser, McNamara, and Jackson (2012) found that intelligent tutoring and AI-based writing systems help students achieve greater clarity, precision, and analytical depth in research-related tasks. Furthermore, the integration of AI tools into students' research practices promotes higher standards of academic scholarship and critical evaluation. Smutny and Schreiberova (2020) observed that students who used AI-based academic support tools demonstrated improved referencing accuracy and stronger methodological alignment in their research projects. However, Selwyn (2019) emphasizes that to sustain high-quality research outputs, students must be guided on ethical AI use and critical engagement with AI-generated content. Overall, existing evidence suggests that AI usage improves the quality of research output among students to a high extent when applied responsibly.

It was discovered from the fourth research question that the level of Awareness among students regarding ethical issues in AI Assisted Research is high. rAccording rto

Afolabi & Bello (2022), awareness of AI tools such as ChatGPT, Grammarly, QuillBot, and Turnitin has grown substantially among students who seek to enhance the quality and originality of their academic work. Studies have shown that students increasingly recognize AI as an essential support system for brainstorming, paraphrasing, grammar correction, and data analysis in research. For instance, Adebayo and Olatunji (2021) observed that most undergraduate and postgraduate students in Nigerian universities are aware of AI applications that aid academic writing, particularly in correcting grammatical errors and improving sentence coherence. Similarly, Eze and Nwankwo (2022) found that a majority of students are knowledgeable about AI-based academic software, which has become an integral part of research and learning activities.

In research question five, findings showed that some students lack information about the recent AI tools needed for their research activities and Some students do not know the right AI to use for their research among others. Although many students are aware of AI applications, only a few possess the technical skills required to use them effectively. According to Eze and Nwankwo (2022), most students learn about AI tools informally, often through peers or online platforms, without structured guidance from instructors or institutional workshops. Adebayo and Olatunji (2021) also noted that the absence of formal training contributes to the misuse of AI systems, resulting in poor-quality academic writing and ethical concerns such as unintentional plagiarism. Another challenge is that

Some AI tools are not tailored to specific academic disciplines. Adefila and Abubakar (2023) warned that overreliance on AI-generated content reduces students' originality and reflective capacity, as many tend to copy or slightly edit machine-produced text without adequate reevaluation. This dependency not only affects academic integrity but also weakens the students' ability to think critically and write creatively without AI assistance.

Some students lack adequate information about recent artificial intelligence (AI) tools that are relevant to their research activities, which limits their ability to fully benefit from emerging technologies. Studies such as Selwyn (2019) and Williamson, Eynon, and Potter (2020) indicate that rapid advancements in AI tools often outpace students' awareness and digital literacy skills. As a result, many students remain unfamiliar with newly developed AI applications that could support literature searching, data analysis, academic writing, and reference management, thereby reducing the effectiveness of their research processes.

In addition, some students do not know how to select the appropriate AI tools for specific research tasks, leading to misuse or underutilization of available technologies. Aldunate and Nussbaum (2013) note that without proper guidance, students may rely on unsuitable AI tools that do not align with their research objectives, methodologies, or ethical standards. This lack of informed choice can negatively affect the quality and credibility of research outputs. Consequently, scholars emphasize the need for targeted

training, information literacy programmes, and curriculum integration to help students identify and apply the right AI tools for their research activities (Holmes et al., 2019).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

This chapter focuses on summary, conclusion and recommendations. This study examined the impact of Artificial Intelligence on the Research Productivity of Library and Information Science students in Edo State. Five research questions were raised to guide the study. The study employed a descriptive survey research design. The population of the study comprised of all undergraduate students in the Department of Library and Information Science (LIS), Edo State who are registered and actively enrolled in the 2024/2025 academic session. A sample of 205 respondents was randomly selected and used in the study and they were drawn to represent the entire population. The Instrument for data collection in this study was a structured questionnaire developed by the researcher titled “The Impact of Artificial Intelligence on Research Productivity of Library and Information Science Students in Edo State (TIAIRPQ). The data collected were analyzed using mean ($\bar{x}$), standard deviation (SD) and percentage method.

The findings from the study showed that ChatGPT is the Commonly used AI tool by LIS Students. Supporting this finding, Tlili et al. (2023) reported that ChatGPT is

widely adopted by university students because it integrates naturally into existing learning workflows without requiring advanced technical skills. Tlili et al noted that students favor ChatGPT over other AI tools because it supports academic writing, reference explanation, and research planning which is a core competency in LIS education. The use of AI tools greatly influences the efficiency of research activities among students. This finding corroborates the finding of Ouyang and Jiao (2021) who found that AI-supported academic tools enhance students' ability to structure research papers, refine arguments, and manage references more effectively. Likewise, Holmes, Bialik, and Fadel (2019) reported that students using AI-based learning and research tools complete research tasks faster and with improved coherence compared to those relying solely on traditional research methods. Also, it was discovered that AI usage improve the quality of research output among students to a high extent. This was supported by Luckin et al. (2016) who argued that AI-supported research tools assist students in refining research questions, improving argument structure, and minimizing logical errors, which leads to higher-quality scholarly outputs. Furthermore, it was discovered that the level of Awareness among students regarding ethical issues in AI Assisted Research is high.

Conclusion

The study concluded that artificial intelligence (AI) tools have become an integral component of research practices among Library and Information Science (LIS) students, with ChatGPT emerging as the most commonly used AI tool. Its widespread adoption

reflects students' preference for accessible and versatile technologies that support literature exploration, academic writing, and conceptual understanding. The prominence of ChatGPT underscores a broader shift in how LIS students engage with digital information systems and highlights the growing relevance of generative AI in academic research environments. Furthermore, the findings revealed that the use of AI tools greatly influenced the efficiency of research activities and significantly improves the quality of research output among students. AI-assisted research enables faster information retrieval, better organization of research materials, and improved clarity and coherence in academic writing. These benefits contribute to enhanced productivity and higher academic standards, demonstrating that AI tools, when effectively utilized, serve as valuable research assistants rather than replacements for students' intellectual efforts.

Despite these positive outcomes, the study also identifies critical gaps that require attention. Although students generally demonstrate a high level of awareness regarding ethical issues in AI-assisted research, some still lack adequate information about recent AI tools and experience difficulty in selecting the most appropriate AI applications for specific research tasks. This suggests the need for structured training, curriculum integration, and continuous awareness programmes to ensure that students can make informed, ethical, and effective use of AI tools. Addressing these gaps will further strengthen the responsible adoption of AI and maximize its benefits for academic research among LIS students.

Recommendations

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

1. Nigerian tertiary institutions offering LIS programmes should formally integrate ChatGPT and similar generative AI tools into information literacy and research methodology courses through guided instructional use.
2. University libraries in Nigeria should establish AI-supported research help desks managed by trained librarians to assist students in using AI tools for efficient literature searching, referencing, and data organization.
3. Institutions should institutionalize AI ethics guidelines by embedding them into student handbooks and research ethics policies, building on existing frameworks such as university plagiarism policies and research ethics committees.
4. Nigerian universities should organize periodic AI literacy workshops and seminars, coordinated by LIS departments and university libraries, to expose students to emerging AI research tools and their appropriate applications.

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QUESTIONNAIRE
LIBRARY AND INFORMATION SCIENCE
DEPARTMENT OF EDUCATIONAL MANAGEMENT
FACULTY OF EDUCATION
UNIVERSITY OF BENIN
BENIN CITY

Dear Respondent,

I am an undergraduate student of the Department of Library and Information Science, Faculty of Education, University of Benin. I am conducting a research study titled: **The Impact of Artificial Intelligence on Research Productivity of Library and Information Science Students in Edo State."** Your participation is entirely voluntary, and all responses will be kept strictly confidential. The information provided will be used solely for academic purposes. Kindly respond sincerely to each item.

Thank you for your time and cooperation.

Yours faithfully,

SECTION A: Demographic Data

1. **Gender:** ☐ Male ☐ Female
2. **Age:** ☐ 16–20 ☐ 21–25 ☐ 26–30 ☐ 31 and above
3. **Level of Study:** ☐ 100L ☐ 200L ☐ 300L ☐ 400L

SECTION B:

SA = Strongly Agree | A = Agree | D = Disagree | SD = Strongly Disagree
Section B

	RESEARCH QUESTION 1	SA	A	D	SD
S/N	What are the AI Tools Commonly Used by LIS Students?				
1.	I use AI-powered search engines (for example, Google Scholar recommendations, Semantic Scholar) for my academic research				
2.	I use AI tools such as ChatGPT or similar platforms to generate research ideas or outlines.				
3.	I use AI-powered citation or reference management tools (e.g., Zotero, EndNote, Mendeley).				
4.	I use AI-based grammar or writing assistants (e.g., Grammarly) when preparing research work.				
5.	I have used AI tools at different stages of my research project.				
6.	Research Rabbit is the most used AI tool among students				
7.	Most students use ChatPDF for their researches				
8.	I and most of my friends use ChatGPT for every area of our research from choosing topic				
9.	Most students do not know about Grammarly and do not use it always				
	Research Questions 2: How does the use of AI tools affect the efficiency of Research activities?	SA	A	D	SD
10.	AI tools help me locate relevant research materials faster than traditional methods.				
11.	The use of AI tools reduces the time I spend on literature review activities.				
12.	AI tools make it easier for me to organize and manage research information.				
13.	Using AI tools improves my ability to complete research tasks within a shorter time.				
14.	AI tools reduce the stress and workload associated with academic research.				
	Research Question 3: To what extent does AI usage improve the quality of research output?	HL	VHL	LL	VLL
15.	AI tools help improve the clarity and structure of my research work.				

16	The use of AI tools improves the overall quality of my academic writing.				
17	AI tools assist me in producing more accurate and well-referenced research outputs.				
18	AI usage enhances my ability to synthesize information from multiple sources.				
19	Research work completed with the help of AI tools is better than work done without them.				
	Research Question 4: What is the level of Awareness among students regarding ethical issues in AI Assisted Research?	HL	VHL	LL	VLL
20	I am aware that excessive reliance on AI tools can affect academic integrity.				
21	I understand that AI-generated content should be properly reviewed before submission.				
22	I am aware of ethical guidelines regarding the use of AI in academic research.				
23	I know that using AI tools without acknowledgment can be considered unethical.				
24	I am cautious about plagiarism and originality when using AI tools for research.				
	Research Question 5: what challenges do LIS students encounter when using AI tools in their research	SA	A	D	SD
25	Most students are not trained to use AI tools for research				
26	Some AI tools are not tailored to specific academic disciplines				
27	Students might depend too much on AI for writing, which can hinder their development of critical thinking and writing skills.				
28	Some students do not know the right AI to use for their research				
29	Some students lack information about the recent AI tools needed for their research activities				