ARTIFICIAL INTELLIGENCE-DRIVEN LIBRARY AND EDUCATIONAL ADMINISTRATION AS CORRELATES OF INFORMATION ACCESS, RESEARCH SUPPORT AND EVIDENCE-BASED ADMINISTRATIVE DECISION-MAKING IN PUBLIC UNIVERSITIES IN LAGOS STATE

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Abstract
Issues that have persisted in educational administration include poor access to information, lack of decision support systems and the absence of advanced technologies for use in the libraries. All these issues have hindered evidence-based administrative decision making at Nigerian public universities. This research aimed at finding out the relationship between artificial intelligence driven library information access, artificial intelligence driven library research support and evidence-based administrative decision making. Two research questions and two null hypotheses were formulated to guide the study. Descriptive Correlational Survey Research Design was used. The target population of the study consisted all the academic staff, library staff and university administrators from four Nigerian public universities in Lagos State. From each institution, 60 respondents, made up of 50 academic staff, 5 library staff and 5 university administrators, totalling 240 respondents, were selected through Stratified Random Sampling technique. Mean and standard deviation were employed in the analysis of data in order to answer the research questions posed, while the hypotheses were tested using the Pearson Product Moment Correlation technique at the 0.05 level of significance. The results obtained indicated that there were positive significant relationships between AI-driven library information access and evidence-based administrative decision making ($r=0.572$, $p<0.05$) and between AI-driven library research support and evidence-based administrative decision making ($r=0.622$, $p<0.05$). The study concluded that AI-driven library services facilitate information access, enhance research support and encourage evidence-based administrative decision making.

Keywords: Artificial Intelligence-Driven Library, Information Access, Research Support, Educational Administration, Evidence-Based Administrative Decision-Making.

Introduction

Educational administration is a core element of university governance that entails the planning, organization, coordination, supervision, and evaluation of institutional activities in order to meet the educational objectives. Efficient educational administration is critical for ensuring effective teaching and learning processes, excellence in research, provision of services to the community, and institution's development (Bakare, 2021). Decision making is at the heart of efficient educational administration since university administrators are constantly making decisions on policy implementation, allocation of resources, educational planning, and quality assurance. How well these decisions are made will largely determine how efficient the university will be in meeting its mandate and responding to new education-related issues. In modern-day universities, efficient decision making is becoming more and more significant since information is a crucial ingredient for institutional management.

The evidence-based decision-making by administrative officers is one of the outcomes of the effective educational administration. This means making decisions using data, facts, and research results and not intuition or tradition. This decision-making enhances the transparency, accountability, planning, and implementation of policies through the use of sound information in tackling educational problems. The administrative officers in higher education institutions who apply evidence-based decision-making have an advantage to enhance the quality of academics, efficiency in the use of resources, good governance of the institution, and response to both internal and external pressures Onwuchekwa (2021). The effectiveness of evidence-based administrative decision-making is greatly dependent on the existence of appropriate information for administrators (Salami & Ibrahim, 2024).

Advancement in Artificial Intelligence (AI) technology have changed the structure of academic libraries to give way to artificial intelligence libraries that make use of intelligent technologies in handling and providing services. AI libraries make use of machine learning, intelligent search engines, natural language processing, automatic cataloguing, digital repositories, and intelligent research tools in managing and disseminating scholarly information. Unlike conventional libraries that depend greatly on human efforts. AI libraries offer quick and precise access to the information resources needed in the education process. In view of increasing adoption of digitalization, AI libraries have come in handy to assist educational administration effectively through knowledge management and decision making (Badmus & Ajibola, 2025).

In contrast, the emergence of Artificial Intelligence (AI) and other technology-driven library systems has transformed information access and management globally. AI-powered information retrieval systems, digital repositories, and intelligent research support tools are now enhancing the speed, accuracy, and efficiency of information delivery in academic environments. These innovations enable administrators and academic staff to access relevant data for

evidence-based decision-making, policy formulation, and institutional planning. As noted by Badmus and Ajibola (2025), AI-enabled library systems have the potential to significantly improve administrative responsiveness and institutional effectiveness by reducing information bottlenecks and enhancing knowledge accessibility.

Educational administration effectiveness itself is multidimensional, encompassing planning, organizing, decision-making, communication, supervision, and evaluation of academic programmes. It also extends to the efficient coordination of teaching, research activities, and community service obligations of universities. When administrators have timely access to accurate and well-organized information through AI-driven systems, their ability to perform these functions effectively is greatly enhanced. Conversely, limited access to modern library technologies can slow down institutional processes and reduce overall productivity in the university system (Salami and Ibrahim, 2024).

Access to information and research support collectively contribute to evidence-based administrative decision-making. So also accessing information that is driven by AI technology facilitates efficient access to academic and administrative information while research support driven by AI provides credible academic evidence for the development of policies and strategies, evaluations of programmes and allocation of resources. Collectively, these two components prevent information access problems, increase the quality of administrative decisions and promote responsiveness of the institution towards emerging educational problems. Therefore, effective use of AI-based library services is likely to improve evidence-based administrative decision-making (Badmus & Ajibola, 2025).

Despite the widespread adoption of AI-based technologies in libraries around the world, numerous public universities in Lagos State still face inadequate implementation and application of such

technologies in their academic libraries. Some of the library activities in certain universities still rely heavily on conventional or semi-digital technologies that offer very little assistance in intelligent information search and AI-based research services. In turn, the university administration faces problems in obtaining accurate information required for making informed decisions. Such an informational gap limits the ability of universities to apply AI-based library technologies in educational administration.

While some literature on the application of artificial intelligence to academic libraries and educational administration exists individually, there is scanty evidence on the association between artificial intelligence-enabled library information access, artificial intelligence-enabled research assistance, and evidence-based administrative decision-making in public universities in Lagos State, Nigeria. Filling this knowledge gap is necessary for appreciating how artificial intelligence-enabled library services will aid educational administration via information and research evidence.

Statement of the Problem

Public universities in Nigeria have continued to face several problems in the field of educational administration, which include ineffective evidence-based administrative decision making, indicated by slow decision-making processes, ineffective coordination of academic activities, and ineffective resource management (Ogunode et al., 2024). These issues have greatly contributed to inefficiencies in the performance of key functions of universities such as teaching, research, and community service delivery.One of the key problems that has contributed to the above is that there is insufficient availability of necessary and timely information required for making effective administrative decisions. University administrators use old-style libraries that involve a tedious process of information gathering and lack proper integration of current technological advances. Therefore, the availability of timely and accurate academic and administrative information has been inefficient, thus affecting evidence-based decision-making and

administrative planning and coordination (Akinola & Oladipo, 2023).

Additionally, inadequate research services provided by AI-powered academic libraries are making things worse. While Artificial Intelligence-powered library systems can improve information searching capabilities and enhance research service delivery by academic libraries, such systems are not well adopted and used by many public universities in Lagos State (Adejo & Misau, 2021). This makes it difficult for academic libraries to provide intelligent research services capable of promoting knowledge creation and development, formulation of policies, and efficient management of the organizations.

Objectives of the Study

The Objectives of the study were to:

1. determine the relationship between AI-driven library information access and evidence-based administrative decision-making in public universities in Lagos State.
2. examine the relationship between AI- driven library research support and evidence-based administrative decision-making in public universities in Lagos State.

Research Questions

The study was guided by the following research questions:

1. What relationship exists between AI-driven library information access and evidence-based administrative decision-making in public universities in Lagos State?
2. What relationship exists between AI-driven library research support and evidence-based administrative decision-making in public universities in Lagos State?

Hypotheses

The following hypotheses were tested at 0.05 level of significance.

1. There is no significant relationship between AI-driven library

information access and evidence-based administrative decision-making in public universities in Lagos State.

2. There is no significant relationship between AI-driven library research support and evidence-based administrative decision-making in public universities in Lagos State.

Literature Review

Administrative education is the planning, coordination, organization, and implementation of activities within institutions with the goal of achieving university objectives such as teaching, research, and community services. The efficiency of the education administration in modern times is based on the effectiveness of administrative decision-making. This includes evidence-based administrative decision-making, which focuses on the utilization of factual data, information, and evidence during institution decision-making.

The practice of evidence-based administrative decision-making improves the transparency, accountability, and efficiency of university governance since decisions are not made out of intuition but based on factual information and research. According to Bakare (2021), the efficiency of administration is based on the organization of institution resources for efficient decision-making processes. The same argument is reiterated by Onwuchekwa (2021) when he claims that universities' leaders should base their operations on efficient information systems.

In Nigeria, the role of administrative decision-making is highly dependent on the availability of credible information, as noted by Salami & Ibrahim (2024). Ogunode et al. (2024) claim that poor results in administrative functions in public universities are caused by inefficient information systems, late data access, and lack of usage of digital technologies.

AI-driven libraries can be described as highly evolved library systems that adopt advanced techniques such as machine learning,

natural language processing, and automated retrieval systems in order to enhance the handling of information. In this case, information access is one of the key elements in the system that determines the level of speed and accuracy with which information is retrieved by users. Examples of AI-driven information access are intelligent search engines, semantic retrieval, automated indexing, recommendation systems, and digital repository systems, all of which enhance the speed and accuracy of information access. According to Adejo & Misau (2021), AI-driven information retrieval is characterized by shifting from manual keyword-based methods to intelligent user-oriented access systems.

According to Adenekan et al. (2021), AI applications in libraries lead to effective information organization and faster retrieval, while Echedoma & Okuonghae (2021) state that AI adoption leads to easy access to digital academic information. Further, Osinulu (2021) states that AI systems make it possible to have sustained access to scholarly information in modern universities. Oyovwe-Tinuoye et al. (2021) state that the adoption of AI-driven information access in Nigerian universities is still at its nascent stage due to low levels of infrastructure and digital literacy.

Research support services is another essential element of AI-powered library system. It involves the application of intelligent technology in helping users to discover, organize, analyze, and manage their scholarly information. Citation management systems, automated literature review tools, plagiarism detection systems, and research analytics systems are some of the research support AI technologies. According to Adejo and Misau (2021), research support through AI-based technologies enhances academic productivity since it makes accessing pertinent research materials easy. Adenekan et al. (2021) go ahead to add that such services help minimize time spent during literature search while ensuring academic excellence. The authors assert that AI-based technologies enable researches to carry out predictive searches and personalized recommendations hence

improving efficiency. These features are particularly useful to university administrations because they give them factual data when formulating policies. However, according to Oyovwe-Tinuoye et al. (2021), the application of AI-based research support services among Nigerian universities is gradually growing due to infrastructural and technical challenges.

Information retrieval through the use of library systems based on AI increases the effectiveness of evidence-based administration since there will be an improvement in the availability of information and provision of research support services. The process of information retrieval allows the administrator to get the required information in time to make necessary decisions. In turn, research support services give valid evidence, which is useful in making decisions. These two aspects, when performed successfully, eliminate information barriers, increase the accuracy of decision-making, and contribute to increased efficiency of institutions. AI systems can thus become effective means of evidence-based administration in universities because of their ability to provide the necessary evidence.

Methodology

The study adopted the descriptive correlational survey research design. The participants of the research were made up of all academic, library and administrative staff in public universities within Lagos State, Nigeria. This includes: University of Lagos (UNILAG), Lagos State University (LASU), Lagos State University of Science and Technology (LASUSTECH), Lagos State University of Education (LASUED). The total number of respondents chosen for the study was 240, using stratified random sampling method. This included 200 academic staff, 20 library staff, and 20 university administrators. The stratification helped in ensuring equal representation of the important stakeholder groups that play a role in education management and library services. A sample size of 240 was adequate because it provided for the representation of the major stakeholder groups that participate in education management and

library services. Besides, the high response rate of 228 (95%) improved the reliability and validity of the results.Data were collected through a structured questionnaire referred to as Artificial Intelligence-Driven Library and Educational Administration Questionnaire (AIDLEAQ). The questionnaire consisted of four areas namely artificial intelligence-enabled library information access, research services using AI, evidence-based decision making and response from participants were rated using 4-point Likert scale.Validity of the instrument was done using face and content validity through validation by experts in educational management and Library and Information science. Their corrections made the questions clear and relevant.

Reliability of the instrument was established using a pilot test. Data from this test were subjected to Cronbach's Alpha to give reliability coefficients of more than 0.70.Analysis of data was done using mean and standard deviation for research questions whereas PPMC for hypotheses at the 0.05 level of significance. The use of PPMC was found fit as the study aimed at determining the strength and direction of the relationships between variables. Decision rule for correlation: 0.00 – 0.19=very weak relationship, 0.20 – 0.39=weak relationship, 0.40 – 0.59=moderate relationship, 0.60 – 0.79=strong relationship, 0.80 -1.00=very strong relationship. Significance at $p<0.05$

Results

Table 1

PPMC Analysis Showing the Relationship between AI-Driven Library Information Access and Evidence-Based Administrative Decision-Making

Variables	N	r-value	p-value	Decision
Information Access & Evidence-Based Decision-Making	228	0.57	0.000	Significant

The result shows a moderate positive and significant relationship between AI-driven library information access and evidence-based administrative decision-making in public universities in Lagos State ($r = 0.57, p < 0.05$). Therefore, $H0_1$ is rejected.

Table 2
PPMC Analysis Showing the Relationship between AI-driven Library Research Supported and Evidence-Based Administrative Decision-Making

Variables	N	r-value	p-value	Decision
Iresearch Support & Evidence-Based Decision-Making	228	0.62	0.000	Significant

The result shows a strong positive and significant relationship between AI-driven library research support and evidence-based administrative decision-making in public universities in Lagos State ($r = 0.62, p < 0.05$). Therefore, $H0_2$ is rejected.

Discussion of Findings

Relationship between AI-Driven Library Information Access and Evidence-Based Administrative Decision-Making

The study revealed that AI-powered information retrieval services in academic libraries make a significant contribution to educational administration effectiveness in public universities in Lagos State. This indicates that improved access to information through AI tools enhances administrative decision-making, planning, and efficiency in university operations. This finding is supported by **Ogunode et al. (2024),** who reported that artificial intelligence systems improve educational administration and planning processes in Nigerian tertiary institutions by enhancing access to timely and relevant information. It also aligns with **Onwuchekwa (2021),** who found that ICT-based information systems significantly improve administrative effectiveness in Nigerian universities through better information flow and coordination of academic activities. Similarly**, Salami and Ibrahim (2024)** observed that effective information systems enhance decision-making quality and institutional efficiency in public universities.

Relationship between AI-Driven Library Research Support and Evidence-Based Administrative Decision-Making

The study also found that AI-based research support services in academic libraries significantly contribute to educational administration effectiveness in public universities in Lagos State. This suggests that AI-supported research tools enhance access to scholarly resources, improve knowledge management, and support evidence-based administrative practices. This finding is supported by **Oyovwe-Tinuoye, Omeluzor, and Patrick (2021),** who reported that ICT-based and emerging digital tools significantly improve research support services and librarians' job performance in Nigerian universities. It also agrees with **Osinulu (2021)**, who noted that modern academic library services enhance access to information resources and support sustainable academic development. In addition**, Echedoma and Okuonghae (2021)**found that digital and AI-related library innovations improve academic library operations and strengthen research support functions in higher education institutions.

Overall, both hypotheses confirm that AI-powered library services play a significant role in improving educational administration effectiveness in public universities in Lagos State. The findings reinforce the view that efficient information retrieval systems and research support services enhance administrative decision-making, academic coordination, and institutional productivity.

Conclusion

From the results of the investigation, it was found out that there is an existence of strong relations between Artificial Intelligence library services and evidence-based administrative decisions at public universities within Lagos State, Nigeria. In detail, Artificial Intelligence library services help increase the availability and accessibility of information needed to make administrative

decisions, while Artificial Intelligence research helps improve the quality of information used in making decisions.In summary, Artificial Intelligence is crucial for improving evidence-based educational administration in public universities.

Recommendations

From the results of the investigation, it was found out that there is an existence of strong relations between Artificial Intelligence library services and evidence-based administrative decisions at public universities within Lagos State, Nigeria.In detail, Artificial Intelligence library services help increase the availability and accessibility of information needed to make administrative decisions, while Artificial Intelligence research helps improve the quality of information used in making decisions. Overall, Artificial Intelligence is crucial for improving evidence-based educational administration in public universities.

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