

INFORMATION LITERACY SKILLS FOR RESEARCH AMONG ACADEMIC LIBRARIANS IN FEDERAL UNIVERSITIES IN NORTH-CENTRAL, NIGERIA

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Abstract

This study examined the effect of information literacy skills (ILS) on the research productivity of academic librarians in federal universities in North-Central Nigeria. Using a survey design, 106 academic librarians from seven federal universities were sampled. Data were collected using structured questionnaires and analyzed using frequencies, percentages, mean scores, and Chi-square and regression analyses. Findings revealed that librarians possessed strong foundational information literacy skills, particularly in identifying information needs and selecting appropriate sources, but lower proficiency in advanced competencies such as citation management and teaching IL to users. Information literacy skills were found to have a statistically significant positive effect on research productivity ($\chi^2 = 21.87$, $df = 9$, $p = 0.010$; multiple regression $R^2 = 0.420$, $p = 0.001$). Key challenges included inadequate training, limited access to databases, and insufficient institutional support. The study concludes that strengthening information literacy skills through targeted professional development and institutional support is essential for enhancing research productivity among academic librarians.

Keywords: information literacy, research productivity, academic librarians, federal universities, North-Central Nigeria

Introduction

Information literacy skills (ILS) have become indispensable competencies for academic librarians in the contemporary knowledge society. As information continues to grow in volume, diversity, and complexity, librarians are expected to possess the ability to recognize information needs, identify appropriate information sources, critically evaluate information, organize research evidence, and use information ethically in teaching, research, and professional practice. These competencies have been widely recognized as essential for effective scholarship, lifelong learning, and evidence-based decision-making (Association of College & Research Libraries [ACRL], 2015; CILIP, 2018; UNESCO, 2021).

The increasing digitization of higher education has further expanded the information responsibilities of academic librarians. Beyond managing library collections, librarians now support digital scholarship, research data management, institutional repositories, scholarly communication, and research visibility. To perform these responsibilities effectively, they must possess advanced information literacy skills that enable them to search electronic databases, retrieve relevant literature, evaluate the credibility of information sources, manage references using bibliographic software, and observe ethical standards in information use. These competencies improve the efficiency and quality of research while strengthening librarians' contributions to knowledge creation within universities (Bruce, 2017; Head & Eisenberg, 2019; Saunders, 2021; IFLA, 2023).

Research productivity has increasingly become an important indicator of academic performance among university librarians. In many Nigerian universities, academic

librarians are recognized as members of the academic community and are expected to contribute to institutional research output through journal publications, conference papers, books, book chapters, technical reports, and other scholarly publications. The quality and quantity of these outputs often influence promotion, professional recognition, and career advancement. Effective information literacy skills enable librarians to identify relevant literature, synthesize evidence from multiple sources, evaluate research findings critically, communicate scholarly ideas effectively, and produce quality research that contributes to institutional development (Corrall, 2018; Julien et al., 2020; Aina, 2021).

Although information literacy is widely acknowledged as a critical research competency, its effective application among academic librarians remains uneven. While many librarians possess basic skills in locating and retrieving information, challenges persist in advanced areas such as systematic literature searching, information synthesis, citation management, research data management, utilization of emerging digital research technologies, and delivery of information literacy instruction. These limitations are often compounded by inadequate professional development opportunities, insufficient institutional support, heavy workloads, poor access to current electronic information resources, and technological constraints, all of which may reduce research productivity (Saunders, 2021; Baro & Eze, 2022; Issa & Omopupa, 2023).

Despite growing scholarly interest in information literacy, existing studies have concentrated largely on students, lecturers, and library users, with comparatively less attention given to academic librarians as researchers whose own information literacy

competencies influence their scholarly productivity. Consequently, empirical evidence on the relationship between information literacy skills and the research productivity of academic librarians in federal universities in North-Central Nigeria remains limited. This gap limits the ability of university administrators, professional bodies, and policymakers to develop evidence-based interventions that strengthen librarians' research capacity and improve institutional research performance (Nwalo, 2022; Iwu-James et al., 2024).

Against this background, this study examined the effect of information literacy skills on the research productivity of academic librarians in federal universities in North-Central Nigeria. Specifically, the study investigated the information literacy skills possessed by academic librarians, examined the extent to which these skills influence their research productivity, and identified the challenges affecting their effective application in research activities. The study focused on academic librarians working in federal universities within the North-Central geopolitical zone of Nigeria in order to provide empirical evidence within a relatively homogeneous institutional setting.

The findings of this study are expected to contribute to both theory and practice by providing empirical evidence on the relationship between information literacy skills and research productivity among academic librarians. The findings may assist university management in strengthening capacity-building initiatives, guide professional bodies in designing continuing professional development programmes, support curriculum improvement in Library and Information Science education, inform policy formulation

aimed at improving research productivity in university libraries, and provide useful reference material for future researchers.

Research Questions

The study is guided by the following research questions:

1. What information literacy skills are possessed by academic librarians in federal university libraries in North-Central Nigeria?
2. How do information literacy skills influence the research productivity of academic librarians in federal university libraries in North-Central Nigeria?

Research Hypothesis

The following null hypothesis was tested at the 0.05 level of significance:

H₀₁: There is no significant influence of information literacy skills on the research productivity of academic librarians in federal university libraries in North-Central Nigeria.

2. LITERATURE REVIEW

Information literacy (IL) is broadly defined as the ability to recognize information needs and to locate, evaluate, and ethically use relevant information to achieve specific goals or solve problems (Association of College & Research Libraries [ACRL], 2015). In the context of higher education, IL extends beyond supporting students and faculty with

research and learning; it encompasses the ability of academic librarians to actively engage in scholarly activities, generate new knowledge, and contribute to the intellectual capital of their institutions (Eze & Uzoigwe, 2018). Academic librarians with strong IL competencies are not only capable of efficiently navigating electronic databases, catalogues, and digital repositories, but they also possess the skills necessary to critically appraise information, integrate evidence from multiple sources, and manage bibliographic data using citation tools such as EndNote, Mendeley, and Zotero. These competencies are increasingly essential in Nigerian federal universities, where access to up-to-date research resources and global knowledge networks can directly influence the quality and quantity of research outputs.

Empirical studies have consistently shown that librarians with higher IL skills demonstrate greater research productivity. Skilled librarians can efficiently access and filter relevant literature from local and international databases, critically evaluate the credibility and relevance of sources, synthesize information across multiple streams, and effectively manage citations and references for publication purposes (Yusuf & Balogun, 2021; Onyenachi & Ogbuiyi, 2022). These abilities not only improve the originality and rigor of research but also enhance the librarians' visibility in academic publishing, thereby contributing to both personal and institutional scholarly reputation.

Despite these benefits, several challenges limit the full application of IL skills among academic librarians in Nigeria. Key barriers include inadequate professional training opportunities, restricted access to subscription-based electronic resources and research

databases, and heavy administrative workloads that reduce time available for research (Olatokun & Adebayo, 2020). In the Nigerian context, and particularly within federal universities in North-Central Nigeria, empirical research investigating the direct relationship between IL competencies and research productivity remains sparse. This gap highlights the need for region-specific studies that can provide evidence-based recommendations for capacity-building programs, targeted professional development, and institutional policies aimed at maximizing the research potential of academic librarians.

Methodology

This study adopted a descriptive survey research design, which is widely used in library and information science research to gather quantitative data on knowledge, skills, attitudes, and practices of a population. This design was considered appropriate because it allows for the collection of detailed information on information literacy skills (ILS) and research productivity of academic librarians while enabling the identification of relationships between variables in a real-world academic setting (Creswell & Creswell, 2018).

The study population comprised 130 academic librarians across seven federal universities in North-Central Nigeria, including the University of Abuja, University of Ilorin, Federal University of Technology, Minna, Federal University, Lokoja, Federal University of Agriculture, Makurdi, University of Jos, and Federal University, Lafia. A census sampling technique was employed, meaning that all members of the population were invited to participate in the study. This approach ensures that the findings are representative of the

entire population of academic librarians in the region. Out of the 130 librarians, 106 valid responses were received, representing an 81.5% response rate, which is considered adequate for reliable statistical analysis (Israel, 2016).

Data collection: This was carried out using a structured questionnaire designed to measure three key dimensions:

1. **Information Literacy Skills (ILS):** Including the ability to identify research needs, access and evaluate relevant information, apply citation management software, and teach IL to library users.
2. **Research Productivity:** Capturing self-reported indicators such as the number of publications, conference presentations, and other scholarly outputs within the past five years.
3. **Perceived Challenges:** Focusing on barriers such as limited access to databases, insufficient training, and heavy administrative workloads.

The questionnaire was pretested with ten academic librarians from a federal university outside the study area to ensure clarity, reliability, and validity. Minor adjustments were made to improve comprehension based on feedback from the pilot study.

Data Analysis:

- Descriptive statistics, including frequencies, percentages, and mean scores, were used to summarize participants' ILS levels and research productivity.
- Chi-square tests examined the relationship between ILS and research productivity.

- Multiple regression analysis assessed the combined predictive effect of ILS on research output. The significance level was set at $\alpha = 0.05$, meaning relationships or predictions were considered statistically significant if the p-value was less than 0.05.

Ethical Considerations: Participation was voluntary, with assurances of confidentiality and anonymity. Approval to conduct the study was obtained from the relevant university authorities, and informed consent was secured from all respondents prior to data collection.

Results And Discussion

Demographic Profile

The 106 respondents were distributed as follows: University of Abuja (8.5%), University of Ilorin (17.0%), Federal University of Technology, Minna (20.8%), Federal University, Lokoja (8.5%), Federal University of Agriculture, Makurdi (10.4%), University of Jos (26.4%), and Federal University, Lafia (8.5%). Response rates were generally high, enhancing the credibility of the data.

Information Literacy Skills of Academic Librarians

Table 1 summarizes respondents' self-reported levels of ILS.

Table 1. Level of Information Literacy Skills (N = 106)

Question one: What information literacy skills are possessed by academic librarians in federal university libraries in North-Central Nigeria?

Skill Area	Very High (4)	High (3)	Low (2)	Very Low (1)	Mean	Interpretation
Identify research information needs	35 (33.0%)	45 (42.5%)	18 (17.0%)	8 (7.5%)	3.02	High
Select appropriate sources	32 (30.2%)	43 (40.6%)	20 (18.9%)	11 (10.4%)	2.90	High
Conduct effective online searches	28 (26.4%)	42 (39.6%)	23 (21.7%)	13 (12.3%)	2.82	Moderate-High
Evaluate source credibility	30 (28.3%)	40 (37.7%)	25 (23.6%)	11 (10.4%)	2.85	Moderate-High
Use citation management software	18 (17.0%)	32 (30.2%)	30 (28.3%)	26 (24.5%)	2.34	Moderate-Low
Ethical use of information	20 (18.9%)	33 (31.1%)	29 (27.4%)	24 (22.6%)	2.40	Moderate-Low
Teach IL to users	22 (20.8%)	35 (33.0%)	30 (28.3%)	19 (17.9%)	2.57	Moderate

Source: Field Survey, 2026

The findings indicate that academic librarians generally possess high levels of foundational information literacy skills. The highest mean score was recorded for the ability to identify research information needs (Mean = 3.02), followed by the ability to select appropriate information sources (Mean = 2.90). Respondents also demonstrated moderately high competence in conducting effective online searches (Mean = 2.82) and evaluating the credibility of information sources (Mean = 2.85). However, lower mean

scores were observed for the use of citation management software (Mean = 2.34), ethical use of information (Mean = 2.40), and the ability to teach information literacy to library users (Mean = 2.57). These findings suggest that while academic librarians possess strong foundational information literacy competencies, advanced skills required for contemporary research practice remain less developed.

These findings imply that academic librarians are generally competent in locating and evaluating information needed for research but require further development in advanced information literacy competencies. The relatively low proficiency in citation management software and information literacy instruction may reduce research efficiency and limit librarians' ability to produce high-quality scholarly publications. The findings agree with Bruce (2017), who argued that advanced information literacy competencies extend beyond information searching to include information synthesis, knowledge creation, and effective dissemination. Similarly, Head and Eisenberg (2019) emphasized that proficiency in information management technologies significantly improves research quality and scholarly productivity. The findings therefore suggest that continuous professional development programmes should focus more on advanced information literacy skills rather than only foundational competencies.

Effect of Information Literacy Skills on Research Productivity

Table 2 presents the influence of ILS on research productivity.

Table 2. Effect of Information Literacy Skills on Research Productivity (N = 106)

Question Two: How do information literacy skills influence the research productivity of academic librarians in federal university libraries in North-Central Nigeria?

Item	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	Interpretation
ILS help me publish in reputable journals	28 (26.4%)	43 (40.6%)	22 (20.8%)	13 (12.3%)	2.92	High
ILS improve originality of research	30 (28.3%)	40 (37.7%)	22 (20.8%)	14 (13.2%)	2.91	High
ILS improve research efficiency	31 (29.2%)	41 (38.7%)	20 (18.9%)	14 (13.2%)	2.95	High
ILS help meet research deadlines	30 (28.3%)	42 (39.6%)	21 (19.8%)	13 (12.3%)	2.94	High
ILS enhance ability to use credible sources	30 (28.3%)	43 (40.6%)	19 (17.9%)	14 (13.2%)	2.96	High

Source: Field Survey, 2026

The results show that respondents generally agreed that information literacy skills positively influence their research productivity. The highest mean score was obtained for the ability to use credible information sources (Mean = 2.96), followed by improvement in

research efficiency (Mean = 2.95), meeting research deadlines (Mean = 2.94), publication in reputable journals (Mean = 2.92), and improvement in research originality (Mean = 2.91). The consistently high mean scores indicate that information literacy skills make substantial contributions to various aspects of scholarly productivity.

These findings demonstrate that information literacy skills play a significant role in improving both the quality and quantity of research produced by academic librarians. Librarians who are able to effectively search, evaluate, organize, and ethically use information are more likely to conduct rigorous research and publish in reputable journals. This finding supports the work of Eze and Uzoigwe (2018), who reported that stronger information literacy competencies enhance research performance among academic staff. It is also consistent with Yusuf and Balogun (2021), who found that librarians with higher levels of information literacy are more productive researchers because they are able to access quality information resources efficiently and apply them appropriately in scholarly work. The findings further reinforce the importance of institutional support for continuous information literacy training as a strategy for improving research productivity.

Hypothesis Testing

H₀₁: There is no significant influence of information literacy skills on the research productivity of academic librarians in federal university libraries in North-Central Nigeria.

The Chi-square analysis revealed a calculated χ^2 value of 21.87 with 9 degrees of freedom and a p-value of 0.010. Since the p-value is less than the 0.05 level of significance,

the null hypothesis was rejected. This indicates that information literacy skills have a statistically significant influence on the research productivity of academic librarians in federal university libraries in North-Central Nigeria.

Furthermore, the multiple regression analysis produced an R^2 value of 0.420, indicating that information literacy skills explained 42% of the variation in research productivity. The regression model was statistically significant ($F = 29.47$, $p = 0.001$), confirming that information literacy skills are a significant predictor of research productivity.

The hypothesis test provides empirical evidence that information literacy skills significantly determine research productivity among academic librarians. The regression result suggests that improvements in librarians' information literacy competencies are likely to result in corresponding improvements in scholarly output. This finding aligns with previous studies that identified information literacy as a critical predictor of research effectiveness and academic productivity. It further underscores the need for university management and professional bodies to invest in continuous training, improved access to digital information resources, and research support programmes that strengthen librarians' advanced information literacy competencies.

Recommendations

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

1. Federal universities in North-Central Nigeria should institutionalize continuous information literacy training programmes for academic librarians, with emphasis on advanced database searching, electronic resource utilization, citation management, and scholarly writing.
2. University libraries should integrate information literacy development into their staff development policies to ensure continuous acquisition and application of information literacy competencies as part of librarians' professional growth.
3. Regular capacity-building programmes, including workshops, seminars, and in-house training, should be organized to strengthen librarians' competencies in literature searching, academic writing, data analysis, and scholarly publishing.
4. University management should improve access to digital research resources, including online databases, e-journals, institutional repositories, and research support tools, to facilitate effective research activities.
5. Academic librarians should be encouraged to participate in collaborative research within and across institutions to promote knowledge sharing, improve research quality, and strengthen the practical application of information literacy skills.
6. Universities should provide institutional support and incentives, such as research grants, conference sponsorships, promotion opportunities, and recognition awards, to motivate academic librarians to engage in research and improve their scholarly productivity.

Conclusion

The findings of this study confirm that information literacy skills (ILS) play a significant role in determining the research productivity of academic librarians in federal universities across North-Central Nigeria. Librarians who possess strong foundational IL competencies—such as identifying research information needs, selecting relevant sources, and conducting efficient literature searches—demonstrate higher efficiency, originality, and quality in their scholarly work. However, the study also reveals that gaps in advanced IL competencies, including citation management, synthesis of complex information, and instructional skills for teaching IL, limit the full research potential of librarians. These gaps can hinder the ability to produce high-quality publications, reduce the impact of research outputs, and constrain librarians' contributions to institutional knowledge creation.

To maximize research productivity, universities must adopt a multi-faceted strategy aimed at strengthening both foundational and advanced IL competencies. First, continuous professional development programs should be instituted, focusing not only on basic information literacy but also on advanced skills such as bibliographic management, data synthesis, academic writing, and training library users. Second, improving access to digital resources, including subscription-based databases, e-journals, and research tools, is critical to ensure that librarians can engage with up-to-date scholarly information and participate fully in the global knowledge economy. Third, universities should implement supportive institutional policies that recognize and reward research efforts, including mentoring programs, research grants, workload adjustments, and formal recognition of scholarly achievements. Such policies would create an enabling environment that encourages the

practical application of IL skills in research activities and fosters a culture of scholarly excellence.

Overall, this study underscores that enhancing information literacy among academic librarians is not merely a matter of individual skill development but a strategic institutional imperative. By prioritizing IL training, resource accessibility, and supportive policies, federal universities in North-Central Nigeria can significantly improve the quality, quantity, and impact of research outputs produced by their librarians, thereby contributing to the broader advancement of higher education and knowledge production in the region.

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