

Influence of Electronic Library Services on Research Activities of Library and Information Science Students in Nasarawa State University, Keffi

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Article DOI: 10.48028/iiprds/ijiraet.v4.i1.16

Abstract

This paper examined the influence of electronic library services on research activities of Library and Information Science students in Nasarawa State University, Keffi. The study was guided by two objectives and two corresponding research questions. Descriptive survey research design was adopted for the study. The population of the study was 373 which comprised undergraduate students of library and information science students in Nasarawa State University, Keffi during the 2024/2025 academic session. The sample size of this study was 373. Complete enumeration method was used for the study because the population of the study is not too enormous. Questionnaire and observation checklist were used as instruments for data collection. Descriptive statistics, such as frequencies, means and standard deviation were used as method of data analysis. The findings of the study revealed among others that extent to which Library and Information Science students utilise electronic library services for their research activities is to a very high. From the findings of the study, it could be deduced that no library can achieve its goals and objectives without the provision of adequate and current information resources as well the provision of effective and efficient electronic library services to meet the information needs of their target users. The study recommended among others that the management of Nasarawa State University, Keffi where the university library is established should strive to provide adequate electronic library services especially virtual reference services and digital archives to satisfy the information and research needs of library and information science students.

Keywords: *Electronic library services, Library and Information Science undergraduate students, Research activities*

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<https://internationalpolicybrief.org/international-journal-of-innovative-research-in-arts-education-and-technology-volume-4-number-1/>

Background to the Study

The 21st century has witnessed a paradigm shift in the way academic library's function, as the global proliferation of digital technologies has redefined how knowledge is created, stored, accessed, and disseminated. Traditional library operations, once limited to physical collections and manual services, are now being complemented and in many cases replaced by electronic library services that offer users round-the-clock access to vast and diverse scholarly resources. These digital services include online public access catalogues (OPACs), electronic databases, e-journals, e-books, virtual reference services, institutional repositories, and digital archives, which collectively enhance the ability of students and researchers to carry out their academic tasks with greater efficiency and precision (Obande and Ayongo, 2024).

In Nigeria, the digitization of library services in universities is increasingly gaining attention as institutions strive to keep pace with global standards in higher education and research productivity. Research activities such as literature review, data collection, analysis, and academic writing are central to the academic development of Library and Information Science Students. The effectiveness of these activities often depends on timely and comprehensive access to relevant information resources according to (Wagay and Sengal, 2021). Research activities are the cornerstone of academic and professional development for students of Library and Information Science (LIS). These activities include identifying research problems, conducting literature reviews, gathering and analyzing data, and disseminating findings through report and publications. The quality of research activities often determines the academic success and career prospects of LIS Students. Research activities constitute a central pillar of knowledge creation and scholarly development in higher education institutions. For students of Library and Information Science (LIS), engaging in rigorous academic research is not only a graduation requirement but also a means of acquiring practical skills necessary for their future careers as information professionals.

Research activities encompass a range of intellectual engagements, including identifying research problems, formulating hypotheses, reviewing related literature, gathering and analyzing data, and synthesizing findings into coherent reports. These activities demand access to timely, reliable, and relevant information sources, without which the quality and credibility of research outputs may be compromised (Odu & Olawoyin, 2020). "The evolution of information and communication technologies (ICTs) has significantly transformed the landscape of academic research. In particular, the emergence and integration of Electronic Library Services (ELS) into university library systems have played a pivotal role in enhancing students' access to diverse and current scholarly resources. Electronic library services refer to a wide range of ICT-driven information delivery platforms that include access to online databases, e-books, e-journals, digital catalogues, electronic reference tools, institutional repositories, multimedia resources, and web-based research support tools. These services provide the infrastructure and content necessary for students to conduct more comprehensive and up-to-date research in a cost-effective and time-efficient manner (Adeleke & Olorunsola, 2010).

Electronic Library Services (ELS) refer to information materials available in digital formats, such as documents, images, and maps, which can be accessed remotely via the Internet or within a digital library setting. According to (Ternenge and Kashimana, 2019) e-resources are electronic products that provide collections of data, including text, image collections, and multimedia, which may be delivered through media like CD-ROMs, DVDs, or online platforms. Anyim (2018) describes electronic Library Services as content accessible via the Internet or CD-ROMs, encompassing e-books, electronic journals, digital reference tools, electronic indexes, online databases, and other electronic collections. Obande and Ayongo (2024) define electronic Library Services as materials presented in electronic or digital formats rather than print, containing the same information as printed materials but differing in format, accessibility, and retrieval methods, requiring the use of computer technology.

Akpojotor (2016) notes that a vast number of printed information resources-including books, monographs, journals, learning materials, and reference works are now accessible in electronic formats. This digital availability allows users to access these resources from remote locations, enhancing the use of information and literature and ultimately improving the effectiveness of information and service delivery. According to Manjunatha (2022) e-resources are documents in digital formats provided to library users through computer-based retrieval systems. The Internet serves as a primary means of accessing most e-library resources/services via various search engines, while offline databases and CD/DVD formats are also available for access without an Internet connection.

Nasarawa State University, library Keffi has made commendable efforts to integrate electronic library services into its academic support structure. The digital section of the university library offers access to online databases such as JSTOR, EBSCOhost, and institutional repositories, among others. Nonetheless, anecdotal evidence and preliminary observations suggest that many Library and Information Science students may not be fully utilizing these services to enhance their research. There are indications that some students still rely heavily on print resources or unverified open-access websites, raising questions about the actual influence of the university's electronic library services on their research practices.

Given this context, it becomes essential to conduct an empirical study to assess the influence of electronic library services on the research activities of LIS students at Nasarawa State University, Keffi. This investigation will provide insights into how students access and use e-resources, the challenges they face, and the perceived value of these services in the research process. By focusing on this specific academic group, the study aims to contribute to ongoing discourse on optimizing digital library service and strengthening research output, in Nigerian universities. The results will also offer evidence-based recommendations for key stakeholders-such as University administrators, Librarians and curriculum developers on how to enhance access and usage of electronic library services to better support student research.

Statement of the Problem

In recent years, academic libraries have transitioned from traditional resource provision to incorporating digital platforms aimed at enhancing access to scholarly materials. This shift has led to the introduction of electronic library services such as e-books, online databases, digital journals, institutional repositories, and reference management tools in many Nigerian universities, including Nasarawa State University, Keffi (NSUK). These services are intended to support research, promote academic excellence, and equip students, particularly those in Library and Information Science (LIS), with skills for navigating the information landscape effectively (Obande and Abdulsalami 2023).

However, despite this digital transformation, concerns have emerged regarding the actual utilization and impact of these resources on students' research activities. Preliminary evidence suggests that many LIS students at NSUK still rely heavily on printed materials or informal sources, even when electronic alternatives are available according to (Wagay and Sengal 2021). This could stem from multiple factors such as lack of adequate awareness, low digital literacy, poor internet infrastructure, or limited orientation on how to access and integrate electronic resources into academic work. Ironically, LIS students are expected to be proficient users of electronic information tools, yet some studies have revealed inconsistencies between the availability of digital services and their actual use by students for scholarly research Anyim (2018). This mismatch raises questions about how effectively these services influence or improve research practices within the department. Therefore, this study seeks to investigate the influence of electronic library services on the research activities of LIS students in Nasarawa State University, Keffi, identifying barriers to effective utilization and proposing ways to enhance their impact.

Objectives of the Study

The general objective of this study is to examine the influence of electronic library services on the research activities of library and information science students at Nasarawa State University, Keffi.

The specific objectives are to:

1. To identify the types of electronic library services most commonly used by Library and Information Science students at Nasarawa State University, Keffi in conducting academic research.
2. To examine the extent to which Library and Information Science students at Nasarawa State University, Keffi utilize electronic library services for their research activities.
3. To investigate the major challenges faced by Library and Information Science students in accessing and using electronic library services for research purposes

Literature Review

Concept of Research Activities

Research activities form the intellectual backbone of higher education institutions, serving as a strategic mechanism through which new knowledge is created, validated, and

disseminated. Within the university environment, particularly in academic disciplines such as Library and Information Science (LIS), research is more than an academic obligation—it is a catalyst for innovation, professional growth, and national development. As students engage in structured research tasks, they develop analytical capabilities, critical thinking, and methodological rigor that transcend the classroom and contribute to solving real-world problems (Zhou, 2025). In the context of LIS students at institutions like Nasarawa State University, Keffi, research activities provide an avenue for investigating emerging information trends, assessing digital library usage, studying user behaviors, and developing systems for effective knowledge dissemination. These research engagements are not isolated endeavors; rather, they are supported by academic supervision, access to electronic library services, and institutional research support structures. As noted by Obande (2024), effective research in LIS requires access to current literature, digital tools, and environments that facilitate deep inquiry and scholarly discourse. Consequently, research is not simply the generation of findings—it is a cyclical process involving problem identification, review of literature, data collection, analysis, interpretation, and dissemination. Modern research is increasingly digital. Students now rely on electronic databases, e-journals, online reference managers, data visualization tools, and collaborative platforms to undertake research. This shift has not only enhanced the ease and speed of accessing scholarly materials but also expanded the breadth and depth of research outcomes. According to Lu et al. (2024), the digital transformation of academic libraries has improved student satisfaction and academic performance, particularly when institutions provide sufficient training on how to use e-resources effectively.

Concept of Electronic Library Services

Electronic library services refer to digital platforms and tools used to deliver traditional library functions in an online environment. These services include access to e-books, online journals, electronic theses and dissertations (ETDs), bibliographic databases, online public access catalogs (OPACs), and institutional repositories (Lu et al., 2025). Their design and delivery are powered by web-based technologies that ensure real-time access, remote connectivity, and cross-institutional resource sharing (Zhou, 2025). Platforms such as DSpace, Greenstone, and KOHA are widely used in managing these resources effectively (Pandeswaran et al., 2023). The deployment of electronic library services enhances learning, teaching, and research by offering 24/7 access to peer-reviewed materials and promoting independent study habits (Obande, 2024). In particular, for students in LIS, mass communication, and sociology, these services enable quicker literature discovery, broader topic exploration, and ease of citation tracking—ultimately improving academic productivity (Lu, 2025). Furthermore, enhanced user interface design and content integration with learning management systems (LMS) contribute to increased usability and satisfaction (Zhou, 2025).

Extent to Which Library and Information Science Students Utilize Electronic Library Services for Their Research Activities

The extent to which Library and Information Science (LIS) students utilize electronic library services (ELS) for research activities reflects not only the availability of such services but also

students' awareness, digital literacy, and the institutional support mechanisms in place. As digital resources continue to expand, LIS students are expected to demonstrate a higher level of engagement with ELS due to their specialized training and exposure to information technologies.

Several studies indicate a generally high level of utilization of electronic library services among LIS students, although the pattern of usage varies by resource type and research need. According to Adebayo and Okiki (2020), LIS students show frequent use of online journal databases and e-books when conducting literature reviews or preparing academic papers. These resources are particularly favored for their academic credibility, comprehensive content coverage, and ease of access. Similarly, Adekunle and Bamidele (2021) observed that LIS students in Nigerian universities regularly use institutional repositories to consult past theses, dissertations, and research reports, highlighting a research-oriented motivation for ELS usage. In conclusion, LIS students generally demonstrate moderate to high utilization of electronic library services for their research activities. However, the degree of engagement is influenced by multiple factors including training, digital skills, perceived relevance, institutional infrastructure, and the breadth of available resources. Increasing awareness, providing hands-on training, and embedding ELS usage in academic programs can significantly enhance the depth and effectiveness of their usage.

Challenges Associated with Using E-Library Services

Despite the transformative impact of e-library services, several challenges continue to limit their optimal use in Nigerian tertiary institutions. A major issue is infrastructural deficiency—including unstable internet networks, frequent electricity outages, and insufficient computer access—which undermines consistent utilization (Obande, 2024). Additionally, many students lack digital literacy skills necessary to navigate library portals or retrieve relevant scholarly content efficiently (Pandeswaran et al., 2023). The problem is compounded by inadequate orientation, absence of continuous user education, and limited helpdesk support in many university libraries (Lu et al., 2024). Furthermore, digital platforms are often poorly designed, with cluttered interfaces, limited search functionalities, and lack of mobile responsiveness—discouraging repeated use (Zhou, 2025). There is also the issue of licensing restrictions and paywalls that limit access to premium journals and databases. Overcoming these barriers requires multi-stakeholder interventions, including investment in digital infrastructure, user training programs, and implementation of user-centered design principles to enhance system usability and relevance (Lu et al., 2025).

Methodology

The study adopted survey research design method. According to Emaikwu (2015), survey research is one in which a group of people or item is studied by collecting and analysing data from a few people or item considered to be representative of the entire population. This method allows for the selection of random samples from large and small population to obtain empirical knowledge of a present nature. The population of the study comprised 373 undergraduate students of library and information science students in Nasarawa State University, Keffi during the 2024/2025 academic session. Total enumeration or census

method was carried out because the population size is manageable. Questionnaire and observation checklist were used as instruments for data collection. The research instrument was validated by experts in the Department of Library and Information Science, Nasarawa State University, Keffi. Errors pointed out were affected by the researcher. Descriptive statistics was used for data analysis.

Results and Discussion of Findings

Table 1: Types of Electronic Library Services

Electronic Library Services	Nasarawa State University Library	
	AV	NA
Online Public Access Catalogues (OPACs)	√	
Electronic databases	√	
E-journals	√	
E-books	√	
Virtual reference services		X
Institutional repositories	√	
Digital archives		X
Electronic reference services	√	
Current Awareness Services (CAS)	√	
Selective Dissemination of Information (SDI)	√	

Key: Available (√), Not Available (x)

The result in Table 1 showed the types of electronic library services available and those not available in the Nasarawa State university library. Electronic library services such as Online Public Access Catalogues (OPACs), electronic databases, e-books, e-journals, institutional repositories, electronic reference services, Current Awareness Services (CAS) and Selective Dissemination of Information (SDI) were all available in all the university library and utilised among library and information science undergraduate students for their academic research. On the other hand, Virtual reference services and digital archives were not available and utilized among library and information science undergraduate students for their academic research.

Table 2: Extent Library and Information Science Students Utilise Electronic Library Services for their Research Activities

S/N	Statements	VHE	HE	LE	VLE	n	FX	\bar{x}	STD	Decision
		4	3	2	1					
1	I use electronic library services for seminars and academic presentations	91	103	87	36	317	883	2.79	0.29	High
2	I use electronic library services for workshops and skill-building sessions	93	103	84	37	317	886	2.79	0.29	High
3	I use electronic library services for conferences and symposiums	112	122	61	22	317	958	3.02	0.52	High
4	I use electronic library services for my independent research projects	137	145	24	11	317	1042	3.29	0.79	High
5	I use electronic library services for research fairs and exhibitions	119	110	47	41	317	941	2.97	0.47	High
6	I use electronic library services for collaborative and sponsored research	97	113	79	28	317	913	2.88	0.38	High
7	I use electronic library services in preparing for my examinations	100	110	61	46	317	898	2.83	0.33	High
8	I use electronic library services in preparing for tests	112	122	51	32	317	948	2.99	0.49	High

VHE= Very High Extent, HE= High Extent, Low Extent= LE, VLE= Very Low Extent, n = Number of Retrieved Copies of Questionnaire, x = Mean and (Benchmark mean = 2.50)

Table 2 showed the extent Library and Information Science students utilise electronic library services for their research activities. All the eight items produced high mean scores which were above the average bench mark of 2.50. These items include item 4: I use electronic library services for my independent research projects (\bar{x} =3.29; SD=0.79), item 3: I use electronic library services for conferences and symposiums (\bar{x} =3.02; SD=0.52), item 8: I use electronic library services in preparing for tests (\bar{x} =2.99; SD=0.49), item 5: I use electronic library services for research fairs and exhibitions (\bar{x} =2.97; SD=0.47), item 6: I use electronic library services for collaborative and sponsored research (\bar{x} =2.88; SD=0.38), item 2: I use electronic library services for workshops and skill-building sessions (\bar{x} =2.79; SD=0.29) and item 1: I use electronic library services for seminars and academic presentations (\bar{x} =2.79; SD=0.29). The decision mean of 2.50 and above is considered as the extent Library and Information Science students utilise electronic library services for their research activities, while the mean of below 2.50 does not indicate the extent Library and Information Science students utilise electronic library services for their research activities.

Table 3: Challenges faced by Library and Information Science Students in Accessing and Using Electronic Library Services for Research Purposes

S/N	Statements	SA	A	D	SD	n	FX	\bar{x}	STD	Decision
		4	3	2	1					
1	Low digital literacy and limited ICT competence among LIS students	93	113	79	32	317	901	2.84	0.34	Agreed
2	Access restrictions due to authentication issues	69	82	106	60	317	794	2.51	0.01	Agreed
3	Inadequate internet connectivity	95	108	59	55	317	877	2.76	0.26	Agreed
4	Inadequate ICT infrastructure within university libraries	101	117	56	43	317	910	2.87	0.37	Agreed
5	Library staff constraints	93	103	73	48	317	875	2.76	0.26	Agreed
6	Economic constraints	100	119	72	26	317	927	2.92	0.42	Agreed
7	Unstable power supply	102	124	46	45	317	917	2.89	0.39	Agreed
8	Limited awareness of available services	82	95	73	67	317	826	2.61	0.11	Agreed
9	Inadequate orientation/continuous user education	91	103	84	39	317	880	2.78	0.28	Agreed

Key: SA – Strongly Agreed, A – Agreed, D – Disagreed, SD – Strongly Disagreed, n = Number of Retrieved Copies of Questionnaire, \bar{x} =Mean and (Benchmark mean = 2.50)

Table 3 showed challenges faced by Library and Information Science students in accessing and using electronic library services for research purposes. Out of the nine items produced high mean scores which were above the average bench mark of 2.50. These items include item 6: Economic constraints (\bar{x} =2.92; SD=0.42), item 7: Unstable power supply (\bar{x} =2.89; SD=0.39), item 4: Inadequate ICT infrastructure within university libraries (\bar{x} =2.87; SD=0.37), item 1: Low digital literacy and limited ICT competence among LIS students (\bar{x} =2.84; SD=0.34), item 9: Inadequate orientation/continuous user education (\bar{x} =2.78; SD=0.28), item 3: Inadequate internet connectivity (\bar{x} =2.76; SD=0.26), item 5: Library staff constraints (\bar{x} =2.76; SD=0.26), item 8: Limited awareness of available services (\bar{x} =2.61; SD=0.11) and item 2: Access restrictions due to authentication issues (\bar{x} =2.51; SD=0.01). The decision mean of 2.50 and above is considered as challenges faced by Library and Information Science students in accessing and using electronic library services for research purposes and vice versa.

Discussion

As regards to research question 1, the findings of the study showed the types of electronic library services available and those not available in the Nasarawa State university library. Electronic library services such as Online Public Access Catalogues (OPACs), electronic databases, e-books, e-journals, institutional repositories, electronic reference services, Current Awareness Services (CAS) and Selective Dissemination of Information (SDI) were all available in all the university library and utilised among library and information science undergraduate students for their academic research. This is in line with the findings of Lu et al. (2025) who posited that electronic library services include access to e-books, online journals, electronic theses and dissertations (ETDs), bibliographic databases, online public

access catalogs (OPACs), and institutional repositories. On the other hand, Virtual reference services and digital archives were not available and utilised among library and information science undergraduate students for their academic research. The unavailability of these electronic library services could be as a result of shortage of fund necessary to put in place the facilities for these library services to function.

In response to research question 2, the extent to which Library and Information Science students utilise electronic library services for their research activities is to a very high extent. The library and information science undergraduate students revealed that they use electronic library services for seminars and academic presentations, for workshops and skill-building sessions, for conferences and symposiums, for independent research projects, for research fairs and exhibitions, for collaborative and sponsored research, for examination and test preparations. The highest mean score was discovered from item 4 in Table 2 on independent research projects. This could be because undergraduate students are expected to carryout independent projects before the completion of their programme with the university and as such, utilise more electronic library services in writing of their projects.

The analysis from research question 4 revealed that low digital literacy and limited ICT competence among students, access restrictions due to authentication issues, inadequate Internet connectivity, inadequate ICT infrastructure, library staff constraints, economic constraints, unstable power supply, Inadequate orientation/continuous user education and limited awareness of available services are challenges faced by Library and Information Science students in accessing and using electronic library services for research purposes. This is in line with the findings of Obande (2024) who argued that the problems associated with electronic library services in university libraries is the issue of infrastructural deficiency including unstable internet networks, frequent electricity outages, and insufficient computer access—which undermines consistent utilisation.

Conclusion

From the findings of the study, it could be deduced that no library can achieve its goals and objectives without the provision of adequate and current information resources as well the provision of effective and efficient electronic library services to meet the information needs of their target users. The study revealed that electronic library services such as Online Public Access Catalogues (OPACs), electronic databases, e-books, e-journals, institutional repositories, electronic reference services, Current Awareness Services (CAS) and Selective Dissemination of Information (SDI) were all available in all the university library and utilised among library and information science undergraduate students for their academic research. However, low digital literacy and limited ICT competence among students, access restrictions due to authentication issues, inadequate Internet connectivity, inadequate ICT infrastructure, library staff constraints, economic constraints, unstable power supply, inadequate orientation/continuous user education and limited awareness of available services were seen as challenges faced by Library and Information Science students in accessing and using electronic library services for research purposes. With all these, there would not be effective research activities by library and information science students at Nasarawa State University, Keffi.

Recommendations

1. The management of Nasarawa State University, Keffi where the university library is established should strive to provide adequate electronic library services especially virtual reference services and digital archives to satisfy the information and research needs of library and information science students.
2. The management of Nasarawa State University, Keffi where the university library is established should provide orientation by organising workshops and symposia on how LIS undergraduate students can access and use electronic library services for their research activities.
3. The management of Nasarawa State University, Keffi should provide adequate fund necessary to acquire adequate ICT facilities, try to install Internet services as well as alternative means of power supply for effective library services.

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