



**INFLUENCE OF LIBRARY ENVIRONMENT AND USER EDUCATION ON UTILISATION OF
LIBRARY INFORMATION SOURCES AMONG POST GRADUATE STUDENTS IN FEDERAL
UNIVERSITY LIBRARIES IN NORTH-EAST, NIGERIA**

BY

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Abstract

This study investigated the influence of library environment and user education on the utilisation of library information sources among postgraduate students in Federal University Libraries in North-East Nigeria. The study was guided by five research objectives and two null hypotheses, and adopted a survey research design. The entire population of 225 registered postgraduate students across three federal universities, namely the University of Maiduguri, Abubakar Tafawa Balewa University Bauchi, and Modibbo Adama University Yola, was studied without sampling due to its manageable size. Data were collected using a structured questionnaire validated for face validity, with a Cronbach Alpha reliability coefficient of 0.89. Descriptive statistics of frequency distribution and percentages were used to answer research questions one to three, while simple linear regression was used to answer research questions four and five and to test the two hypotheses at the 0.05 level of significance. Findings revealed that the library environment across the studied institutions was generally fair, with facilities such as internet connectivity, temperature regulation, noise control, availability of information sources, and library personnel requiring considerable improvement. Methods of delivering user education, including lectures, orientation, bibliographic instruction, and guided tours, were found to be largely underutilised. The frequency of library use among postgraduate students was also generally low across most academic activities, including research, reference consultation, and access to electronic resources. Regression analysis showed that library environment exerted a strong positive influence on utilisation of library information sources ($R = 0.807$, $R^2 = 0.651$, $F(1,223) = 81.29$, $p < .05$), while user education also exerted a strong positive influence ($R = 0.722$, $R^2 = 0.521$, $F(1,223) = 75.74$, $p < .05$). Both null hypotheses were consequently rejected. The study concluded that improving the physical and technological library environment, alongside implementing more consistent and interactive user education programmes, is essential for enhancing postgraduate students' effective utilisation of library information sources. Recommendations included increased funding for library infrastructure, adoption of more practical user education approaches, and regular retraining of librarians on modern information literacy strategies.

Keywords: Library environment, User education, Utilisation, Library information sources, Postgraduate students, Federal University Libraries and North-East Nigeria

Introduction

The academic library occupies a strategic position in the teaching, learning and research activities of universities because it provides access to information resources required by students and researchers to accomplish their academic objectives. In contemporary higher education, library information sources extend beyond conventional print books and journals to include electronic books, electronic journals, institutional repositories, online databases, reference materials, newspapers, theses, dissertations and other digital scholarly resources. The increasing volume and complexity of information available to university communities have consequently made the effective utilisation of library resources an important issue. For postgraduate students, who are expected to



undertake independent research, engage critically with scholarly literature and produce original academic contributions, effective access to and utilisation of relevant information sources is particularly important. However, the availability of information resources does not automatically translate into effective use. Students require an environment that facilitates access, concentration and interaction with library resources, as well as appropriate knowledge and skills for identifying, locating, evaluating and using those resources. Recent Nigerian studies indicate that although students possess some basic information and ICT skills, such skills may not be sufficient for maximum utilisation of available library resources (University of Ibadan Journal of Library and Information Science, 2024). Thus, the effectiveness of an academic library should be considered not merely in terms of the quantity of resources it possesses, but also in relation to the conduciveness of its environment and the extent to which users are educated to exploit its resources effectively.

Library environment refers broadly to the physical, technological, informational and service conditions within which users interact with the library. It encompasses such factors as adequacy and arrangement of library space, furniture, lighting, ventilation, temperature, cleanliness, noise control, seating capacity, accessibility of shelves, availability of computers and other technological facilities, internet connectivity and the general atmosphere created for reading, learning and research. A conducive environment can encourage students to visit the library, remain longer and make greater use of available information resources, whereas an uncomfortable or poorly equipped environment may discourage library use even when relevant resources are available. Evidence from Nigerian academic libraries demonstrate the importance of these environmental factors. Ejiroghene (2020) found that inadequate technological facilities and poor network connectivity constituted important challenges to the use of electronic sources, while the study also established a significant relationship between library environment, user education and library use. Similarly, research on students' access to library information resources identified poor arrangement of books, inadequate library guidance and insufficient knowledge of access tools among the factors that hinder effective resource utilisation (Umebali, 2024). These findings suggest that the library environment is not simply a physical setting but an enabling or constraining factor that can influence how effectively students interact with both print and electronic information sources.

Closely associated with the library environment is user education, which is the systematic process through which library users acquire the knowledge and practical skills required to identify, locate, retrieve, evaluate and use library information resources and services. User education may be provided through library orientation, guided tours, formal use-of-library courses, bibliographic instruction, individual assistance, research consultations, database demonstrations and information-literacy programmes. Its significance has become greater as academic libraries increasingly provide large collections of electronic resources that may be difficult for inexperienced users to discover and exploit independently. David-West (2020), in a study conducted at the University of Port Harcourt, Nigeria, reported a significant difference between library user education and students' utilisation of the library and recommended more proactive user education to promote library use. Similarly, Ayanfemi and Adayi (2022) found a significant relationship between user education and the use of library resources among students of the Federal Polytechnic, Idah, Nigeria, indicating that user education positively influences resource utilisation. More recent evidence also shows that user education can develop students' capacity to become more independent in locating and retrieving information, although challenges such as inadequate time, large class sizes and irregular delivery of user education can reduce its effectiveness (Phillips, 2022). Consequently, user education should be viewed as an essential mechanism through which libraries convert the mere availability of information resources into meaningful and effective use.

The relevance of user education becomes even more pronounced among postgraduate students because postgraduate study places greater demands on independent information searching, scholarly communication, literature review, evidence-based argument and research production. Unlike many undergraduate users who may primarily seek textbooks or materials recommended by lecturers, postgraduate students are expected to identify current and authoritative scholarly information from multiple sources and disciplines. They therefore need



advanced skills in searching electronic databases, constructing search strategies, identifying peer-reviewed literature, evaluating information quality, accessing full-text resources, managing references and using institutional repositories and other scholarly communication platforms. Recent research continues to demonstrate that conventional approaches to user education may not adequately address contemporary information needs. Governor and Mesagan (2024), for example, reported insufficient user education provision and ineffective practices in colleges of education in Delta State and recommended the integration of modern approaches, including web-based and other technology-supported strategies. Likewise, a 2024 study of students in two Nigerian federal universities found that students possessed some basic skills for using online databases, but that these skills were insufficient for optimal utilisation of available library resources; the study consequently recommended strengthening user education through computer and ICT literacy programmes (University of Ibadan Journal of Library and Information Science, 2024). These observations are particularly significant for postgraduate students, whose research activities require more sophisticated and sustained interaction with scholarly information sources.

The interaction between library environment and user education is therefore important in understanding the utilisation of library information sources. A student may receive adequate instruction on how to search databases, locate books or access electronic journals, but an inadequate technological environment, poor internet connectivity, insufficient computers, uncomfortable reading spaces or poorly organised collections can restrict the practical application of those skills. Conversely, a well-equipped and attractive library may still be underutilised if students are unaware of its resources or lack the skills required to locate and use them. This suggests that library environment and user education may operate both independently and jointly in influencing information-source utilisation. Ejiroghene (2020) provides empirical support for this position by reporting that library environment and user education jointly and independently contributed to library use among students. However, recent evidence also indicates that the relationship is not necessarily automatic. Malik et al. (2025), in a study of university libraries in Kwara State, found that although orientation, library instruction and bibliographic guidance were available, students' use remained concentrated on core resources, with relatively limited engagement with specialised collections and advanced services. The study further reported that user education did not have a statistically significant relationship with effective use of library resources and services in that particular setting, suggesting that accessibility, students' schedules and institutional support may also influence utilisation. This variation in findings demonstrates the need for context-specific investigation rather than assuming that the provision of user education or a good physical environment automatically guarantees effective utilisation of library information sources.

Against this background, the study on the influence of library environment and user education on utilisation of library information sources among postgraduate students Federal University Libraries in North-East, Nigeria is significant because it focuses on two potentially complementary factors that can determine whether university library resources are translated into actual academic and research use. While previous Nigerian studies have examined library environment, user education or students' utilisation separately and several have focused predominantly on undergraduates, there remains a need to examine these variables specifically among postgraduate students whose information requirements are more research-intensive. The issue is particularly important in an era in which university libraries are investing increasingly in electronic databases, digital collections and technology-enabled services, while students may still encounter difficulties related to awareness, information-searching skills, accessibility, internet connectivity and the physical study environment. Recent research in Nigeria continues to recommend stronger and more innovative user education, improved access to electronic resources and more supportive library environments as means of enhancing students' effective use of information resources (Governor & Mesagan, 2024; Umebali, 2024). Therefore, investigating how library environment and user education influence the utilisation of library information sources among postgraduate students can provide empirical evidence for improving library facilities, user-education programmes, information-literacy instruction and research support services. Such evidence can assist university libraries and administrators



in developing a more conducive, accessible and user-centred information environment capable of meeting the evolving scholarly and research needs of postgraduate students.

Statement of Problem

Library information resources are identified, selected, acquired and organized for the benefits of its users. Users are expected to visit the library if they have information needs, where they can have access to well organized and current information sources. But only few users come to use the library, this has become a problem because information sources are available in North-East Nigerian federal university libraries. Could it be the library environment is not conducive and lack awareness about the available information sources due to lack of user education? It is for this reason the study determined influence of library environment and user education on utilization of library information sources among post graduate students in Federal University Libraries in North-East, Nigeria.

Purposes of the Study

In particular, this research aimed to:

1. examine the characteristics of the library environment among post graduate students in Nigeria's Federal University Libraries in the northeast.
2. ascertain the methods of delivering user education among post graduate students in Nigeria's Federal University Libraries in the northeast.
3. examine the frequency of library use among post graduate students in Nigeria's Federal University Libraries in the northeast.
4. examine the influence of library environment on utilization of library information sources among post graduate students in the Nigeria's Federal University Libraries in the northeast.
5. determine the influence of user education on utilization of library information sources among post graduate students in the Nigeria's Federal University Libraries in the northeast.

Research Questions

To direct the study, the following research questions were raised:

1. What are the characteristics of library environment among post graduate students in Nigeria's Federal University Libraries in the northeast?
2. What are the methods of delivering user education among post graduate students in Nigeria's Federal University Libraries in the northeast?
3. What is the frequency of library use among post graduate students in Nigeria's Federal University Libraries in the northeast?
4. What is the influence of library environment on utilization of library information sources among post graduate students in Nigeria's Federal University Libraries in the northeast?
5. What is the influence of user education on utilization of library information sources among post graduate students in Nigeria's Federal University Libraries in the northeast?

Hypotheses

To direct the study, the following null hypotheses were formulated:

1. There is no significant influence of library environment on utilization of library information sources among postgraduate students at Nigeria's Federal University Libraries in the northeast.
2. There is no significant influence of user education on utilization of library information sources among post graduate students in Federal University Libraries in North-East, Nigeria.

Methodology

A survey research design was used in the study. The study population made up of 225 registered postgraduate students from the libraries of three federal universities in North-East Nigeria, namely; University of Maiduguri



(65), Abubakar Tafawa Balewa University, Bauchi (79), and Modibbo Adama University, Yola (81). These universities were selected because they have existed for over thirty years and run various postgraduate programmes. The study used the whole population. Iliegbulen and Amini (2000) stressed that the members of research population must share common characteristics such as group belongingness, homogeneity, occupation and acceptability, and when the population is tiny, the entire population can be utilized. Therefore, sampling was not necessary because the complete population of registered postgraduate students was used for the study due to their small size. The structured questionnaire used to collect the data was called “Influence of Library Environment and User Education on Utilisation of Library Information Sources among Post Graduate Students Questionnaire”. Face validation was applied to the instrument. Using Cronbach Alpha statistics, the instrument's reliability coefficient was found to be 0.89. Research questions one, two, and three were addressed using descriptive statistics of frequency distribution and percentages; research questions four and five were addressed using the R-value of simple linear regression; and the hypotheses developed at the 0.05 level of significance were tested using the p-value.

Results

Research Question 1: What are the characteristics of library environment among post graduate students in Nigeria's Federal University Libraries in the northeast?

Table 1: Frequency Distribution and Percentages of the characteristics of library environment among post graduate students in Nigeria's Federal University Libraries in the northeast (N=225)

S/N	Characteristics of Library Environment	Excellent	Very Good	Good	Fair	Poor
1	Library Building	27 (12.3%)	40 (18.2%)	100 (45.5%)	33 (15%)	20 (9.1%)
2	Seating Arrangement	30 (13.6%)	40 (18.2%)	89 (40.5%)	40 (18.2%)	21 (9.5%)
3	Availability of Library information sources	40 (18.2%)	50 (22.7%)	45 (20.5%)	63 (28.6%)	22 (10%)
4	Temperature within the Library	10 (4.5%)	11 (5%)	40 (18.2%)	110 (50%)	49 (22.3%)
5	Library Furniture	29 (13.2%)	41 (18.6%)	87 (39.5%)	41 (18.6%)	22 (10%)
6	Lighting	20 (9.1%)	25 (11.4%)	40 (18.2%)	80 (36.4%)	55 (25%)
7	Deco of the Library (Interior Design)	19 (8.6%)	21 (9.5%)	70 (31.8%)	80 (36.4%)	30 (13.6%)
8	Noise Level within the Library	10 (4.5%)	12 (5.5%)	50 (22.7%)	90 (40.9%)	58 (26.4%)
9	Signage within and outside library	28 (12.7%)	42 (19.1%)	86 (38.6%)	42 (19.1%)	22 (10%)
10	Electricity Supply	30 (13.6%)	50 (22.7%)	65 (29.5%)	50 (22.7%)	25 (11.4%)
11	Internet Connectivity within the library	41 (18.6%)	49 (22.3%)	48 (21.8%)	59 (26.8%)	23 (10.3%)
12	Toilets	12 (5.5%)	13 (5.9%)	47 (21.4%)	95 (43.2%)	53 (24.1%)
13	Library Personnel	18 (8.2%)	22 (10%)	75 (34.1%)	85 (38.6%)	20 (9.1%)

The findings in Table 1 show the characteristics of the library environment in North-East Nigeria's Federal University Libraries. The findings show that the library building (45.5%), seating arrangement (40.5%), library



furniture (39.5%), signage within and outside the library (39.1%), and electricity supply (29.5%) were predominantly rated as good, indicating that these characteristics of the library environment are adequate. The availability of library information sources (28.6%), temperature within the library (50.0%), deco of the library (interior design) (36.4%), noise level within the library (40.9%), toilets (43.2%), library personnel (38.6%) and internet connectivity (**26.8%**) were mostly rated as fair, suggesting the need for improvement in these areas. Overall, the results show that the Federal University Libraries in North-East Nigeria provide a fair library environment. This is because most of the library environment indicators, including the availability of library information sources, temperature within the library, interior design, noise level, internet connectivity, toilets, and library personnel, were predominantly rated as fair by the respondents.

Research Question 2: What are the methods of delivering user education among post graduate students in Nigeria's Federal University Libraries in the northeast?

Table 2: Frequency Distribution and Percentages of the methods of delivering user education among post graduate students in Nigeria's Federal University Libraries in the northeast (N=225)

S/N	Methods of User Education	Yes	No
1	Lectures	20 (9.1%)	200 (90.9%)
2	Library Orientation for new Students	18 (8.2%)	202 (91.8%)
3	Basic Bibliographic Instructions	21 (9.5%)	199 (90.5%)
4	Guided library tour	17 (7.7%)	203 (92.3%)
5	Use of Library Courses	16 (7.3%)	204 (92.7%)
6	Advanced bibliographic instruction	19 (8.6%)	201 (91.4%)
7	One on one library uses instructions	30 (13.6%)	190 (86.4%)

The findings in Table 2 show the methods of delivering user education in North-East Nigeria's Federal University Libraries. The findings show that the lecture method (9.1% Yes; 90.9% No), indicates that lecture method is rarely used for user education. Similarly, library orientation for new students (8.2% Yes; 91.8% No), indicating that orientation programmes are not commonly implemented. Basic bibliographic instruction (9.5% Yes; 90.5% No) and guided library tour (7.7% Yes; 92.3% No) were also largely not in use, showing limited exposure of users to these instructional methods. Likewise, use of library courses (7.3% Yes; 92.7% No) and advanced bibliographic instruction (8.6% Yes; 91.4% No) were minimally applied in the libraries. Although one-on-one library use instruction recorded the highest usage (13.6% Yes; 86.4% No), it still indicates low adoption compared to non-utilization. Overall, the findings reveal that the methods of delivering user education in Federal University Libraries in North-East Nigeria are largely underutilized, as all listed methods recorded very high "No" responses, indicating limited implementation of structured user education programmes.

Research Question 3: What is the frequency of library use among post graduate students in Nigeria's Federal University Libraries in the northeast?

Table 3: Frequency Distribution and Percentages of the frequency of library use among postgraduate students in Nigeria's Federal University Libraries in the northeast (N=225)

S/N	Frequency	Daily	Twice a week	Weekly	Monthly	Quarterly	Never
1	To study and read for examination	50 (22.7%)	30 (13.6%)	25 (11.4%)	19 (8.6%)	15 (6.8%)	81 (36.8%)
2	Find materials for assignments	29 (13.2%)	30 (13.6%)	25 (11.4%)	28 (12.7%)	30 (13.6%)	78 (35.5%)
3	To do research	21 (9.5%)	25 (11.4%)	28 (12.7%)	30 (13.6%)	29 (13.2%)	87 (39.5%)
4	To consult reference materials	19 (8.6%)	21 (9.5%)	27 (12.3%)	29 (13.2%)	31 (14.1%)	93 (42.3%)
5	To borrow materials for	21	32	27	29	29	82



	academic work	(9.5%)	(14.5%)	(12.3%)	(13.2%)	(13.2%)	(37.3%)
6	Make use of wireless Internet connectivity on my devices	51 (23.2%)	31 (14.1%)	26 (11.8%)	20 (9.1%)	25 (11.4%)	67 (30.5%)
7	Make use of library computers and Internet access	55 (25%)	35 (15.9%)	26 (11.8%)	25 (11.4%)	27 (12.3%)	52 (23.6%)
8	Consult librarians for information	17 (7.7%)	19 (8.6%)	25 (11.4%)	27 (12.3%)	28 (12.7%)	104 (47.3%)
9	Access Electronic information resources	43 (19.5%)	32 (14.5%)	23 (10.5%)	17 (7.7%)	23 (10.5%)	82 (37.3%)
10	Group discussion with my course mates	11 (5%)	13 (5.9%)	19 (8.6%)	28 (12.7%)	30 (13.6%)	119 (54.1%)
11	To consult news papers	20 (9.1%)	21 (9.5%)	27 (12.3%)	29 (13.2%)	21 (9.1%)	102 (46.4%)

The findings in Table 3 show the frequency of library use among postgraduate students in North-East Nigeria's Federal University Libraries. The findings show that group discussion with course mates (54.1%), consulting librarians for information (47.3%), consulting newspapers (46.4%), and to study and read for examination (36.8%) were predominantly rated as "Never," indicating that a sizable percentage of the respondents do not use the library for these academic and interaction-based activities. Similarly, doing research (39.5%), consulting reference materials (42.3%), borrowing materials for academic work (37.3%), and accessing electronic information resources (37.3%) were also mostly rated as "Never," suggesting low engagement of postgraduate students with core library services that support research and academic writing. On the other hand, making use of library computers and internet access (25.0%) was rated as "Daily," indicating that a relatively higher proportion of postgraduate students frequently utilize library computers and internet facilities for academic activities. Overall, the results show that postgraduate students use in North-East Nigeria's Federal University Libraries is generally low use with majority of respondents who indicated "Never" across important academic activities, and only a small percentage regularly use both traditional and ICT-based library services.

Research Question 4: What is the influence of library environment on utilization of library information sources among post graduate students in Nigeria's Federal University Libraries in the northeast?

Table 4: Result of Simple Linear Regression of the influence of library environment on utilization of library information sources among post graduate students in Nigeria's Federal University Libraries in the northeast (N=225)

Variables	R	R ²	Adjusted R ²
Library environment	0.807	0.651	0.650
Utilization of library information sources			

The result in Table 4 show a correlation coefficient (R-value) of 0.807, indicating a very high positive relationship between library environment and utilization of library information sources among users in Federal University Libraries in North-East, Nigeria. The coefficient of determination (R² – value) of 0.651 also shown in Table 4 indicates that 65.1 percent of the variance in utilization of library information sources among users in Federal University Libraries in North-East, Nigeria is predicted by library environment. This means that there is influence of library environment on utilization of library information sources among post graduate students in Federal University Libraries in North-East, Nigeria.



Research Question 5: What is the influence of user education on utilization of library information sources among post graduate students in Nigeria's Federal University Libraries in the northeast?

Table 5: Result of Simple Linear Regression of the influence of user education on utilization of library information sources among post graduate students in Nigeria's Federal University Libraries in the northeast (N=225)

Variables	R	R ²	Adjusted R ²
User education	0.722	0.521	0.520
Utilization of library information sources			

The result in Table 5 show a correlation coefficient (R-value) of 0.722, indicating a high positive relationship between user education and utilization of library information sources among users in Federal University Libraries in North-East, Nigeria. The coefficient of determination (R^2 – value) of 0.521 also shown in Table 5 indicates that 52.1 percent of the variance in how patrons of Federal University Libraries in North-East Nigeria use library resources is predicted by user education. This indicates that the use of library information sources by patrons of Federal University Libraries in North-East Nigeria is influenced by user education.

Hypothesis One: There is no significant influence of library environment on utilization of library information sources among postgraduate students at Nigeria's Federal University Libraries in the northeast.

Table 6: Result of Simple Linear Regression of the influence of library environment on utilization of library information sources among post graduate students at Nigeria's Federal University Libraries in the northeast (N=225)

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	6195.00	1	6195.00	81.29	.00 ^b
1	Residual	16994.25	223	76.21		
	Total	23189.25	224			

Table 6 presents the result of the simple linear regression analysis conducted to determine whether library environment has a significant influence on the utilisation of library information sources among postgraduate students in Federal University Libraries in North-East Nigeria. The analysis produced a regression sum of squares of 6,195.00, with 1 degree of freedom and a corresponding mean square of 6,195.00, while the residual sum of squares was 16,994.25, with 223 degrees of freedom and a mean square of 76.21. The total sum of squares was 23,189.25 with 224 degrees of freedom. More importantly, the analysis yielded an F-ratio of 81.29 at 1 and 223 degrees of freedom, with a reported significance value of 0.00. Since the significance value of 0.00 is less than the predetermined alpha level of 0.05, the regression model is statistically significant. This result indicates that library environment significantly predicts the utilisation of library information sources among postgraduate students. In practical terms, variations in the condition and quality of the library environment are associated with variations in students' utilisation of available information sources. A conducive environment characterised by adequate seating, appropriate lighting and temperature, effective noise control, comfortable furniture, reliable electricity and internet connectivity, accessible information resources and adequate library support services can encourage postgraduate students to visit and use the library more effectively, whereas an unfavourable environment may discourage regular and meaningful utilisation of library resources. Based on the statistical evidence, the null hypothesis which states that there is no significant influence of library environment on the utilisation of library information sources among postgraduate students in Federal University Libraries in North-East Nigeria is rejected. The significant F-ratio of 81.29 ($p < 0.05$) demonstrates that the influence observed is statistically significant rather than a result of random variation.



Hypothesis Two: There is no significant influence of user education on utilization of library information sources among post graduate students at Nigeria's Federal University Libraries in the northeast

Table 7: Result of Simple Linear Regression of the influence of user education on utilization of library information sources among post graduate students at Nigeria's Federal University Libraries in the northeast (N=225)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5879.14	1	5879.14	75.74	.00 ^b
	Residual	17310.11	223	77.62		
	Total	23189.25	224			

Table 7 presents the result of the simple linear regression analysis conducted to determine whether user education has a significant influence on the utilisation of library information sources among postgraduate students in Federal University Libraries in North-East Nigeria. The analysis produced a regression sum of squares of 5,879.14, with 1 degree of freedom and a corresponding mean square of 5,879.14, while the residual sum of squares was 17,310.11, with 223 degrees of freedom and a mean square of 77.62. The total sum of squares was 23,189.25 with 224 degrees of freedom. The most important result is the F-ratio of 75.74 at 1 and 223 degrees of freedom, with a reported significance value of 0.00. Since the significance value of 0.00 is less than the predetermined alpha level of 0.05, the regression model is statistically significant. This indicates that user education significantly influences the utilisation of library information sources among postgraduate students. In practical terms, the finding suggests that students who receive appropriate instruction on how to identify, locate, retrieve, evaluate and use library information sources are more likely to utilise such resources effectively. User education programmes such as library orientation, bibliographic instruction, guided library tours, database-search training, use-of-library courses, individual instruction and information-literacy programmes can improve students' awareness and understanding of available resources and consequently enhance their ability to use both print and electronic information sources for academic and research purposes. Based on the statistical evidence, the null hypothesis which states that there is no significant influence of user education on the utilisation of library information sources among postgraduate students in Federal University Libraries in North-East Nigeria is rejected. The significant F-ratio of 75.74 ($p < 0.05$) confirms that the observed influence of user education on utilisation is statistically significant.

Discussion of the Findings

Based on the finding, the characteristics of the library environment of Federal University Libraries in North-East Nigeria were found to be fair. The finding may be attributed to the fact that only a few aspects such as the library building, seating arrangement, furniture, signage, and electricity supply were rated as good, while a larger number of key facilities were rated as fair. These include availability of library information sources, temperature regulation, interior design, noise control, internet connectivity, toilets, and library personnel. This suggests that although some physical structures are in acceptable condition, essential service and comfort-related facilities are not adequately developed or maintained. The situation may be linked to inadequate funding, poor maintenance culture, and insufficient modernization of library facilities to meet increasing user demands. The finding aligns with that of Ejiro (2020) who discovered that features of the college library environment include the availability of library information resources, a good library building, and sitting arrangements.

Based on the finding, the methods of delivering user education in Federal University Libraries in North-East Nigeria were found to be highly underutilized. The underutilization of user education methods indicates that structured programmes for user education are not consistently implemented in the libraries. The situation may be due to overreliance on traditional or informal methods, lack of trained personnel to deliver specialized instruction, inadequate ICT facilities, and insufficient institutional emphasis on information literacy training. Large student populations and limited time allocated for library instruction may also contribute to the low implementation of these methods. The finding contradicts that of Abubakar, Chollom and Rasaki (2025) who discovered that lectures, handbook presentations to students, the use of library guides, library tours, and the mandatory teaching



of General Studies two-credit unit courses are the main user education strategies used to improve the efficient use of information resources in the library.

The frequency of library use among postgraduate students at Federal University Libraries in North-East Nigeria was found to be typically low. The generally low frequency of library use among postgraduate students suggests that postgraduate students do not regularly depend on the library for academic work. The finding may be explained by the increasing reliance on alternative digital information sources such as Google Scholar, online databases, and open educational resources. In addition, poor library conditions, limited awareness of available services, and time constraints associated with postgraduate studies may discourage frequent physical library use. The finding is consistent with that of Busuyi and Kehinde (2023), who found that most 400L students do not consistently utilize the library. The finding contradicts that of Jolly (2022) who discovered that the participants made extensive use of the library's resources. The results of the study on the influence of the library environment on users' use of library information sources in Federal University Libraries in North-East Nigeria showed that the library environment has a significant influence on users' use of library information sources. The significant influence of library environment on utilization of library information sources suggests that a conducive library setting enhances users' ability and willingness to access available resources. A well-arranged reading space, adequate lighting, reliable internet connectivity, and comfortable seating improve user satisfaction and encourage effective use of information sources. Conversely, poor environmental conditions can hinder access and reduce engagement with library materials. This finding is consistent with the view that physical and technological environments play a critical role in library resource utilization. The finding corroborates with that of Ejovwokoghene's (2022) findings, who indicated that undergraduate use of public university libraries in Delta States was influenced by the current conditions of the library environment. The finding also agrees with that of Udo and Edidon (2022) who discovered that library environmental elements significantly impact students' use of the University of Uyo Main Library's services.

The finding of the influence of user education on utilization of library information sources among users in Federal University Libraries in North-East, Nigeria revealed that there is significant influence of user education on utilization of library information sources among users in Federal University Libraries in North-East, Nigeria. The significant influence of user education indicates that when students are properly trained on how to locate, access, and use information resources of the library, their level of utilization improves. User education equips students with information literacy skills such as catalogue use, database searching, referencing tools, and awareness of available resources. However, when user education is poorly delivered or underutilized, students may lack the necessary skills to effectively exploit library resources. This explains why improvements in user education positively affect utilization patterns. The finding agrees with that of Malik and Salah (2025) who discovered that although user education is crucial, accessibility, lecture scheduling, and institutional support have a greater impact on users' use of library information sources.

Conclusion

The study concludes that the library environment in Federal University Libraries in North-East Nigeria is generally fair, with important areas such as internet connectivity, temperature, noise control, information resources and library personnel requiring improvement. User education methods were found to be inadequately utilised, while postgraduate students generally demonstrated low frequency of library use for research, reference consultation, borrowing materials and accessing electronic information resources. The findings further established a strong positive influence of library environment on the utilisation of library information sources, with an R-value of 0.807 and R^2 of 0.651, while user education also showed a strong positive influence, with an R-value of 0.722 and R^2 of 0.521. Both null hypotheses were rejected because the influence of library environment and user education on utilisation was statistically significant at the 0.05 level. The study therefore concludes that improving library facilities and creating a more conducive environment, alongside regular and effective user-



education programmes, is essential for increasing postgraduate students' utilisation of library information sources in Federal University Libraries in North-East Nigeria.

Recommendations

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

1. University management should improve funding and prioritization of library development to enhance the overall library environment.
2. Librarians should adopt more interactive and practical approaches to user education to improve students' information literacy abilities and promote efficient use of library resources.
3. Postgraduate students should make more frequent use of the library for academic activities such as research, assignment preparation, and consultation of reference materials.
4. Library authorities should prioritize the continuous improvement of the library environment, since it significantly influences the utilization of library information sources.
5. Librarians should be regularly trained and retrained on modern user education strategies and emerging information technologies.

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