

User Education, Library Environment Factors and Library Use among Undergraduates in Federal Universities in North-Central Nigeria

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ABSTRACT

University libraries provide information resources to support scholarly activities of their parent institutions. Research, however, revealed that undergraduates in federal universities underutilise these resources; meaning, this can negatively affect their general academic performance. Factors responsible for this drift were investigated. This study thus, has determined the relationships of user education, and library environmental factors (noise, ventilation and physical facilities) "and" the frequency of use of library in federal conventional universities in North-Central Nigeria. Method: The study adopted the survey method of ex-post factor research design. Two research instruments comprise of questionnaire and interview were used for data collection. The questionnaire comprises of four scales which include frequency of library use, methods used to acquire user education, levels of user education and instruments on environmental factors for undergraduates. In addition, interviews were conducted with university librarians, this was conducted with checklists developed for university librarians. Analysis: Data collected were analysed using descriptive statistics: percentages and inferential statistics, spearman moment correlation, ANOVA and multiple regression analysis. Hypotheses were tested at 0.05 level of significance. Results: The results of data analysis revealed that there is a strong relationship between the four independent variables with the dependent variable ($R=0.504$) and explains 25.4% of the variance in library use. There are also relative contributions of the four variables on the dependent variable. However, user education made the greatest contribution to the use of library ($\beta = 5.944$ $P < 0.05$). This was followed by control of noise level ($\beta = 0.908$; $P < 0.05$), while ventilation and physical facilities made the least contribution ($\beta = 0.319$; $P < 0.5$ & $\beta = 0.144$ $P < 0.05$) respectively. It is concluded that the independent variables should be considered as critical factors for library use among undergraduates.

Keywords: User Education, Library Instruction, Undergraduate Use of Library, University Libraries, Environmental Factors - University Libraries

Introduction

Contrary to the expectations and the grand intention for establishing university libraries, literature has revealed that many of the university libraries in Nigeria are underutilized by undergraduates; despite the quality and vast informational resources that are provided by the libraries. This may be

attributed to certain factors such as: low or outright lack of user education and conducive study environment. In order to increase use of library and its resources by undergraduates in North-Central and the entire Nigerian universities, it is important to empirically determine the extent to which these factors actually contribute with the view to promote university libraries use.

Research Questions are:

1. What is the frequency of library use by undergraduate students of the conventional federal universities in North-Central Nigeria?
2. What are the methods for acquisition of user Education by the students?
3. What are the responses on general information on libraries from the Librarians?

Research Hypotheses:

1. There is no composite relationship of user education, noise, ventilation, and library physical facilities on the use of library by the undergraduates
2. There is no relative contributions of individual four independent variables on the dependent variable

Literature Review**Students' use of University Libraries**

University libraries invest a significant portion of their budgets in the acquisition of resources - information, physical/structural and human resources. In addition to implementing and administering these resources, the library and its management need to maintain their cost-effectiveness. The philosophy of any university library is ensuring the effective use of its resources with the view to justifying its existence. Over the years, many studies have globally been conducted on the library use. These studies cover the use of the library, book circulation, effect of physical facilities on library use and collections use. Utilization of the library is the most effective means of library can prove its usefulness and relevance in universities. Utilization of the Library will promote undergraduate students' academic performances and achievements if adequate resources and services are provided as opined by (Gbemi-Ogunleye, 2016). There are many factors that determine the use of library. Some factors are users based; some are institutional, environmental, and technological, while some are library centered. These factors are expected

to be considered into by the Management of any library when developing their products and services.

Library backup imply library users visit to the library to consult its information resources; and the services that it offers in order to satisfy their information needs. When patrons use the library as backup, it entails that the library offers something that the patrons desires; and the desiring party/patrons goes to use the library. Therefore, the library provides information services that the patrons desire; thus, they patronize the library by coming to the library to seek for the services, in order to satisfy their needs. To this, therefore, Ejiroghene (2020) submitted that the influence and implementation of information and communication technology (ICT) in library practices enables users to remotely patronize and use the services of the library, and also the need to encourage their patronage of the physical library services'.

The problem of underutilization of academic libraries has forced library managers to justify the enormous investment in them. Patrons have expressed their significant lost of interest in the physical libraries due to their influence with IT-driven services as the physical services have been taken over by the Internet, as well as local networking devices and systems (Udo, and Ben, 2022). Accordingly, what could change patrons' perception of the academic library include, but not limited to, the library environment, library user education, and user-librarian collaboration.

User education and library Use

In order to assist library users to maximize the use of library resources, several methods have been developed and adopted by information professional. However, the major user education methods deployed to enhance effective utilization of information resources in the library include lecture, presentation of handbook to students, use of library guide, library tour and compulsory teaching of General Studies two credit unit course.

Ogunsheye (1987) asserts that user education causes behavioural and

developmental changes which can be exhibited through their attitude towards knowledge and its utilization. However, finding from a study on the use of catalogue by clinical and medical students at the E. Latunde Odeku Medical Library by Ezomo (1988), found that about 50% of the students were not aware of the location of the library catalogue not to talk of using it. This situation was attributed to the fact that many of the students did not participate in library orientation programmes and many would not ask for assistance as regards catalogue use. In a related development, Nwezi (2022) findings showed that the traditional user education methods adapted by two universities libraries in South Eastern Nigeria - Nnamdi Azikiwe University, Awka and Imo State University, Owerri affected the students in information search in the libraries.

David- West (2020) found that there is a significant difference between library user education and student's utilization of library by faculty of humanities, University of Port Harcourt. He suggested that librarians should be very proactive when it comes to user education in order to promote library usage. Earlier, Bem-bura (2015) in a survey to find the student perception of library orientation programme in Benue State University of Makurdi. The found that skills acquired from user education assisted students in their academic performance to a very high extent.

Environmental factors and use of library

Conducive environment is a critical factor that can enhance and attract users to the library. A healthy library environment with good and quality ventilation is evidently needed by all users. The importance of maintaining desirable indoor air quality and thermal comfort in building design has been increasingly recognized. These include adequate ventilation lightning appropriate cooling and heating systems. In their work, Vanlalnunpuii and Rastogi (2022) posited that, 'a well-designed and efficient natural ventilation system is mandatory for visitors and workers in any library. Poor ventilation strategies in libraries can cause excessive use of air-conditioning which may lead to high

energy consumption and poor indoor air quality.

Researchers in environmental conditions in libraries had recommended that provision of conducive environment in libraries will include: a well-ventilated library that allows an effective exchange of indoor air with fresh outdoor air; provides fresh air movement and cooling and eliminates the re-circulation of air that carries bacteria and other harmful microbes. Also, it was agreed that a properly designed and well-functioning ventilation strategy can reduce the energy consumption of the building by minimizing the use of mechanical ventilation and power lighting (Emmerich, et al., 2001, Lomas, Cook and Faila, 2007, Sands, 2008, Basu et al., 2019).

Noise pollution is another inhibitor to the use of library. It is an important contaminant which could indeed provoke physical and mental disorder in users. It is well documented that noise pollution limits the amount and quality of information collected from academic environments, affecting perception, cognition, and learning (Diac, 2014). In universities, the most conducive environment to learn is the library, but noise making can inhibit and make it inconvenient for users. A qualitative inquiry undertaken in three US Universities revealed that students frequently complain about the noise level in the libraries, and the lack of formal rules regulating noise (Barton, 2018).

A study on the perception of library services by students in private universities by Oluwunmi, Durodola & Ajayi (2016) revealed that their satisfaction with the library services was above average, however, their perception on provision of facilities like parking space and escape routes was very low. It is recommended that university libraries should prioritize provision of facilities/services in their budgetary allocation for quality improvement.

Conceptual Framework

The conceptual framework of this study (Fig1.) shows how the independent variables (user education and library environmental factors) relate to the dependent

variable (use of library). The provision of adequate user education as instruction designed to teach undergraduate students the rudiments of library services, facilities and organization, library resources and search strategies may provide the necessary information skills and in turn influence them to retrieve and use the library. Also, during the instruction, librarians will educate the students on the available physical facilities the library has for the students' use. In other words, – having knowledge of how to use the library and its facilities in information searching and retrieval – may correlate with the undergraduate students' use of library. As established in literature, the vast majority of undergraduate students in universities globally recognize the importance of user education as well as good library environmental factors.

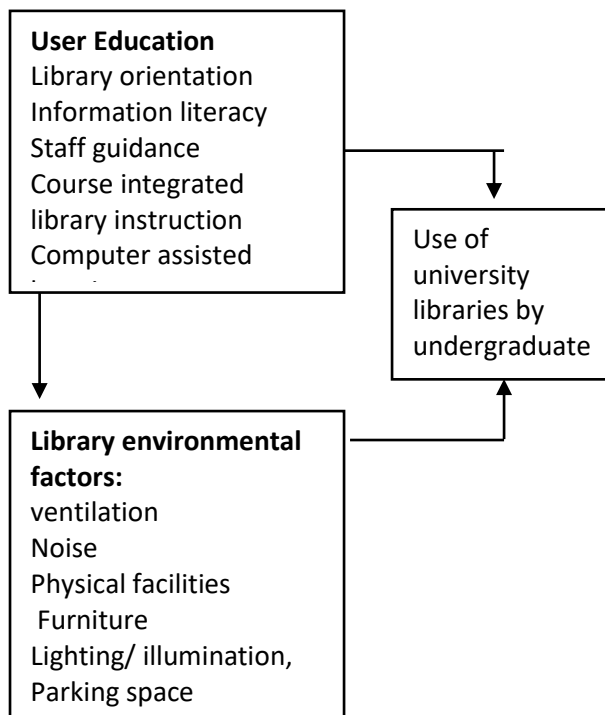


Fig 1: Conceptual framework for user education, library environmental factors and use of library (Self constructed)

Methodology

This study adopted the descriptive survey research design of the ex post facto. This study described and showed the relationship between the variables of interest as they exist among the undergraduate students

and no attempt was made to manipulate any of the variables. The population for this study comprised all undergraduate students (100 – 500 level) in the five federal conventional universities in North Central geo political zone of Nigeria (Table 3.1 below). Also included are all the University librarians/ Reference librarians in the university libraries. The stratified random sampling technique was adopted for the selection of the participants. This was to achieve a good spread across the universities in North-Central Nigeria as well as to ensure that both the old and new federal universities in the zone are represented in the study. The levels of strata in the study are universities, faculty and departments in the universities as well as different levels of the students in the universities. Total enumeration of all the universities was considered and purposive sampling was adopted to select two faculties each from the universities.

The selection of two faculties from each generational university is adequate so as to have the same number selected from each stratum in order to have a good representation of the population for the study. The five universities selected are:- Federal University Lafia, Federal University Lokoja, University of Abuja, University of Ilorin and University of Jos. The researchers used random sampling technique to select two departments from each faculty. The criterion for selection was that the two departments have the highest number of students in their respective faculties. Questionnaire and interview supplemented with observation were the research instruments used to collect quantitative and qualitative data for the study. The questionnaire had three components: The demographic components, user education and questions on library environmental facilities. The face validity of the instrument was determined by giving it to experts in environmental studies and lecturers in the Departments of Library and Information Science, Federal Polytechnic Kaltungo. Also, the reliability test of the instruments was conducted to ascertain their consistency in Plateau State University Bokkos.

The instruments were analysed with the Cronbach alpha method to determine their reliabilities indices; the instrument on the frequency of use of library was found to have

psychometric property of 0.78, that of students' user education had a coefficient alpha value of 0.84, and that of environmental factors was 0.75. These values made the instruments reliable. Four research assistants were employed to distribute and collect the questionnaires from each university selected for the study. The researchers were there physically to facilitate the procedure and ensure quality control. Interviews were conducted with the University Librarians/Reference Librarians in the selected

university libraries. Physical inspection and observations was conducted on the availability of facilities. Quantitative data from questionnaire were analysed using Statistical Packages for the Social Sciences (SPSS). These include percentages, Spearman moment Correlation, Anova and Multiple Regression were used to analyse the joint effect of the independent's variables on the dependent variable. Data generated from the interviews were analysed by content analysis.

Table 1: Population and sample size

SN	University	UG Population	Sample size (5% Error Margin)	Target per Faculty		Target per Dept.	
1	University of Ilorin	43,140	158	Education	125	Science Education	81
				Social Sciences	33	Arts Education	44
						Political Science	21
						Mass Communication	12
2	University of Jos	38,112	139	Education	97	Science & Technical Education	56
				Social Science	42	Social Science Education	41
						Political Science	23
						Criminology	19
3	Federal Univ Lafia	9,421	34	Education	25	Vocational Education	16
				Social Sciences	9	Science Education	9
						Sociology	5
						Political Science	4
4	Federal University Lokoja	7,913	29	Education	17	Arts Education	9
				Social Science	12	Science Education	8
						Political Science	7
						Sociology	5
5	University of Abuja	6,416	24	Education	13	Science Education	10
				Social Science	11	Arts Education	3
						Sociology	6
						Political Science	5
	Total	105,002	384		384		384

Source: Academic Planning Units of the Universities

Results and Discussion

Research Questions:

RQ1: What is the frequency of library use by undergraduate students of Federal Conventional Universities in North-Central Nigeria?

Table 2: Summary of frequency of library use by undergraduate students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Occasionally	124	32.5	42.8	42.8
	Often	137	35.9	47.2	90.0
	Very Often	29	7.6	10.0	100.0
	Total	290	75.9	100.0	
Missing	System	92	24.1		
Total		382	100.0		

Table 2 depicts the frequency of use of library by respondents. Majority of respondents 137 (47.2%), 'often' use the library's informational resources; 124(42.8%) occasionally used the library while 29(10%) used the library very often (Table 2)). Majority of the respondents (47.2%), 35.7% consulted library for class assignment. Only 27.2% very often frequent the library for examination purposes while 36.4% never borrowed library books. 43.1% frequent the library and never read newspapers. Similarly, 34.8% never used the journals. 38.6% occasionally frequent the library to browse the internet while 38.5% occasionally frequent the library to read library books. Indeed only 35.6% occasionally frequent the library to do individual projects, and 39.4% occasionally too frequent the library to do group projects. Occasionally 35.9% frequent the library to use past theses so also occasionally 36.9% frequent the library to use the abstracts. 10.0% frequent the library occasionally to consult projects.

Prominent the strategies for delivery of library instruction to undergraduate students by university libraries as presented in Table 3A are; user education 313 (81.9%), followed by library orientation 282 (73.8%) and course integrated library instruction 202(2.9%) the

least method are workshops 42(11%) and seminar 41 (10.7%).

RQ3: What are the responses on general information on libraries from the Librarians?

Information from the oral interview shows the ratings of the undergraduates user education from the scale of 0 to 5 to low and average of 3.7; this is well above average and University librarians' ratings is in consonance with the empirical value obtained from their levels of user education. All the university librarians responded that their university taught user education to their undergraduates and the programme entails general rules on how to use the library effectively through information literacy. On whether the programme has helped their students, ninety percent responded in the affirmative While only ten percent said "not really" because it is only theoretical approach.

This too has thrown light on the percentage of the students that have acquired user education to be 87.9%, and only 12.1% have not acquired the skills. This therefore calls for the program to consist of practical sessions. This too has shown lack of practical sessions during the orientation programme

On the provision of facilities in the library, qualitative data from the interviews revealed that the seating capacity for the sampled

universities was 3000 for University of Abuja, 500 for Federal University, Lafia, 751 for Federal University of Lokoja, 5000 for University of Ilorin and 4000 for University of Jos. This amount to a total of 13,251 seats provided for 105,002 students across the universities. This gave an average ratio of seven students to seat (7: 1) which is grossly inadequate for undergraduate students, without consideration for other segment of users including the postgraduate students and other users (staff and visitors). To address this challenge, efforts should be made to increase the seating capacity of these libraries to accommodate and attract more users to the library especially during examinations period.

Data from the Interviews revealed that adequate provisions were made for other facilities as there was provision for power-backup as to make sure that libraries were well illuminated and provided with of proper ventilation. In addition, there was provision of carrels and discussion rooms to reduce the levels of noise in the reading spaces. Furthermore, posters were pasted at strategic places to caution readers on the need to maintaining silence in the library. These can be a motivational gesture to attract library users.

RQ2: What are the methods for acquisition of user Education by the students?

Table 3A: Acquisition of user education

		Frequency	Percent	Valid Percent	Cumulative Percent
Users Education					
Valid	Yes	313	81.9	87.9	87.9
	No	43	11.3	12.1	100.0
	Total	356	93.2	100.0	
Missing	System	26	6.8		
Total		382	100.0		
Library Orientation					
Valid	Yes	282	73.8	100.0	100.0
Missing	System	100	26.2		
Total		382	100.0		
Course Integrated Library Instruction					
Valid	Yes	202	52.9	100.0	100.0
Missing	System	180	47.1		
Total		382	100.0		
Staff guidance					
Valid	Yes	166	43.5	100.0	100.0
Missing	System	216	56.5		
Total		382	100.0		
User's Manual (Handbook)					
Valid	Yes	148	38.7	100.0	100.0
Missing	System	234	61.3		
Total		382	100.0		
One-on-one talk (with anybody)					
Valid	Yes	88	23.0	100.0	100.0
Missing	System	294	77.0		
Total		382	100.0		
Tutorial					
Valid	Yes	89	23.3	100.0	100.0
Missing	System	293	76.7		
Total		382	100.0		
Seminars					
Valid	Yes	41	10.7	100.0	100.0
Missing	System	341	89.3		
Total		382	100.0		
Workshops					
Valid	Yes	42	11.0	100.0	100.0
Missing	System	340	89.0		
Total		382	100.0		

Using computer assisted learning					
Valid	Yes	90	23.6	100.0	100.0
Missing	System	292	76.4		
	Total	382	100.0		

a. Predictors: (Constant), library user education level, noise, physical facilities, ventilation

Results from test of Research Hypotheses:

RH1: There is no composite relationship of user education, noise, ventilation, and library physical facilities on the use of library by the undergraduates

Table 4a: Composite relationship of level of user education, Noise, ventilation, and library physical facilities on the use of library

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.504 ^a	0.254	0.242	10.64019

Table 4a depicts the result of data analysis on the composite relationship of user education, noise factor, ventilation, physical facilities and the use of library. Since $R=0.504$, this indicates a strong relationship between the four independent variables with the dependent variable. R square shows that our model (noise level, physical facilities, ventilation and library user education level) explains 25.4% of the variance in library use

Table 4b: Model Relationship of the variables

ANOVA^a

Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	9476.109	4	2369.027	20.925	.000b
	Residual	27850.560	246	113.214		
	Total	37326.669	250			

- Dependent variable: Library use
- Predictors: (Constant), library user education level, noise, physical facilities, ventilation

RH2: There is no relative contributions of individual four independent variables on the dependent variable

Table 4b indicates how significant the model is. The result indicated that $p=0.000$ which shows that the relationship is statistically significant.

Table 4c: Contribution of the individual independent variables on the dependent variable

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	29.701	7.610		3.903	0.000
	Noise level	0.908	0.211	0.242	4.298	0.000
	Ventilation	0.319	0.361	0.061	0.885	0.377
	Physical facilities	0.144	0.271	0.037	0.532	0.595
	My library user education is at	5.944	0.774	-0.428	-7.684	0.000

*Dependent Variable: Library use

every unit change in noise level affects library usage by 0.908; every unit change in ventilation affects library usage by 0.319; every unit change in physical facilities affects library usage by 0.144; and every unit change

As presented in Table 4c, the relative contribution of each of independent variable to library use by the undergraduates is as follows:

in user education affects library usage by 5.944. This indicated that there are relative contributions of individual variables to dependent variable

Discussion of Findings

It can be inferred from the study that there the universities place important attention to library instruction so as to boost the capability of undergraduate students to maximize the use of library for their academic activities. Also, the study also revealed that adequate facilities were put in place to make the library conducive for users. However, the study revealed that, the libraries were underutilized by undergraduate students. Also, library materials were not used as most of the students used the libraries to read assignments and examinations. These activities probably show that the students are focusing on only passing their examinations. This is at variant with the concept and objectives of university libraries which was to promote independent and lifelong learning.

Primarily, the library is setup as a special centre for the undergraduates to access information and other services with a view of satisfying their scholarly needs. In supporting this assertion, Ejiroghene (2020) posited that even though there are ICT that enable users to obtain information remotely from the library, there is need also to influence their patronage of the physical library not only for reading but also for other services. This position was supported by Udo & Ben (2022) that It will appear that investment in the physical library will be a colossal waste if proper initiative is not put in place to maximize their utilisation. To address the concern and the perception of these scholars, there is the urgent need to reshape the library environment and increased efforts on user education that can bring a change in attitude towards knowledge and utilization of the library.

Acquisition of User Education: It can be deduced from the empirical data majority of respondents acquired formal user education skills which assisted them in their academic activities. It was also revealed that the major method for acquisition of user education was library orientation, closely followed by course integrated library instruction. This is expected

because the National Universities Commission (NUC) Benchmark on Academic Standards makes mandatory for all the universities to teach the Use of Library as a part of their programme for undergraduate courses. In many universities, this method is complement with library orientation with the view to get students familiar with the library resources and the physical facilities.

Today, in practice, student's enrolment in universities is growing astronomically, orientation as a method of user education may not be enough to achieve the desired goals, as it will be difficult to evaluate and assess the learning outcome of the participants. It is of note that the purpose of user education programme is to make the undergraduates maximize the library resources for their academic activities and thereafter become sophisticated users of the resourced. It is imperative that universities adopt credit earning information literacy courses, which apart from the providing room to measure their performance, it will imbue them with necessary skills and competences. The finding corroborated earlier studies on user education (Bem-bura, 2015, David-West 2020, Olaniyi (2022) and Qianviu et al. (2019) that user education programme had positive and effective impacts on undergraduates learning outcomes.

Further analysis of data revealed that each of the four factors made significant relative contributions to the use of library. The summary of regression of use of library on user education, noise, ventilation and physical facilities indicated that the R-Value of 0.504 was significant, confirming that the four factors were relevant and potent towards the explanations of students' use of their libraries. In addition, the analysis of the regression of the four independent variables on the dependent variable implies that in addition to user education, provision of necessary physical facilities and adequate ventilation with environment devoid of noise, these factors would greatly motivate and attract students to use the libraries for academic activities which in turn, eventually produce graduates that will contribute meaningfully to the socio-economic development of Nigeria.

The finding of this study was at variance with that of Ig-Worlu (2021) who found that frequent use of library at federal university libraries in South-South zone of Nigeria depended on the aesthetics and physical facilities of the libraries.

Conclusion and Recommendations

The essence of establishing university libraries is to support the mandate of the university through provision of teaching, learning and research resources for users. It is important for undergraduates to make use of university libraries, particularly for their general knowledge and academic activities. The use of libraries will, apart from promoting independent and lifelong learning, enhance their performance and improve their research productivity. However, it was established in the study that the university libraries were equipped with resources and made accessible, nevertheless, the frequency of visits and use of the libraries was not at optimal; the libraries are used for readings, especially in preparation for examination. Since the four independent variables individually contributed significantly to the use of library, and jointly had a strong positive multiple correlation with the use of library, it is imperative that management of the university libraries should consider these independent variables as critical factors in their policies to promote library use among undergraduates.

Contribution to Knowledge

This study has established from literature, that the independent variables correlated with student's use of library to locate, retrieve and use library's informational resources. However, none of the literature has shown the joint effects of these two variables. Therefore, this study has contributed evidently to literature of the composite correlation of user education and environmental factors on use of libraries system within a social system especially the undergraduates. Findings from the study will also assist policy makers in the area of policy statement that should be enshrined in the university libraries policy documents.

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