Access and Ease of Use of Open Source Library Management Software by Librarians in University Libraries in North-Central Nigeria

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Abstract
This study investigated librarian's access and ease of use of open source library management software in university libraries in North-Central Nigeria. Two research questions were investigated, and one hypothesis was tested at a significance level of 0.05. A descriptive survey design employing total enumeration sampling was utilized to examine a sample population comprising 301 librarians. Data collection was conducted through a questionnaire. Analytical methods included frequency, mean, and standard deviation for the research questions, while the Pearson Product Moment Correlation Coefficient was applied to test the hypothesis at the 0.05 significance level. Results indicated a significant association between access and ease of use of OSLMS in university libraries. Additionally, the study found a high level of ease of use and access to OSLMS among librarians. Recommendations included the adoption of various training platforms such as workshops, seminars, and conferences to maintain proficiency in OSLMS usage, alongside ongoing upgrades to hardware and software for enhanced task performance, safety, efficiency, error tolerance, and user-friendliness.

Keywords: Access, Ease-of-Use, Open Source Library Management Software, University Libraries, North-Central

INTRODUCTION

The integration of technology in library management has significantly transformed information handling and user services in libraries. The adoption of open-source library management software in North-Central Nigerian libraries signifies a significant transformation in their operating environment. This software promises cost-effectiveness, customisation, and accessibility, potentially revolutionising how librarians handle cataloguing, circulation, and resource management.

Open source library management software (OSLMS) is vital in university libraries as it is used for managing the library, circulating library materials, maintaining serial control, doing stock

verification, generating reports, and providing other library amenities. Librarians interact with the user community to get information about the availability of books, bibliographic data, newly acquired books, book reservations, catalogue searches, and other services in one location. Libraries currently benefit from the availability of several commercial software options that provide advanced features for managing library operations, but at a high cost. However, most institutions and their libraries are unable to bear the exorbitant expenses associated with using commercial items (Jeyapragash et al., 2019).

Ease of use is a fundamental term that refers to the level of ease with which people may interact with a product. A user is an individual who employs a certain tool or resource in order to accomplish their objective. Ease-of-use refers to the level of usability of a product, service, tool, process, environment, or programme. Similarly, those who use OSLMS for the purpose of managing household tasks are referred to as OSLMS users, specifically librarians. Additionally, those who frequent the library or use OSLMS and see it as beneficial are considered library patrons. According to Barman (2020), a user is defined as an individual who actively seeks access to the knowledge that is accessible in the library (p. 1). The use of open source software has become a worldwide phenomenon due to its cost-effectiveness, adaptability, accessibility to source code, and capacity to be freely distributed. According to Shafiq et al. (2014), low usability, or the lack of ease of use, is seen as a potential danger to the efficacy of a new system. This lack of effectiveness will ultimately have an influence on the degree of satisfaction. The study by Venkatesh and Bala (2008) discussed the system's usability, also known as ease-of-use. The research highlighted the importance of the user's self-efficacy, computer fun, and outcome demonstrability in ensuring the usefulness of the system.

Access to OSLMS, to a large extent, means the ability to gain entry to use OSLMS. This is because even if open source library management software is available but with limited access, the purpose for which the OSLMS were acquired will be defeated. Access is the degree to which many people use a resource, service, or product. It might be seen as the capacity to effortlessly access OSLMS with little or no strain. Accessibility to OSLMS could be achieved where there is reliable internet access, an adequate power supply, the availability of functional computer systems, and the technical know-how of librarians and users of the OSLMS in the library (Sejane, 2017).

The Internet is an important instrument for enhancing librarians' ability to access and use OSLMS. Nevertheless, the efficient use of information and communication technologies (ICTs) in Africa is impeded by several factors, including insufficient infrastructure, limited bandwidth, inadequate search capabilities, insufficient financing for universities, exorbitant costs of information technology equipment, unfavourable foreign exchange rates, and insufficient communications infrastructure. Technical requirements include computers, network connectivity, bandwidth, and system accessories. Reliable network connectivity is essential for the effective and efficient use of OSLMS in libraries.

House (2016) suggested that the library should provide network connection infrastructure to enable librarians to utilise OSLMS more effectively and efficiently. Arif and Mahmood (2012) said that having a sufficient quantity of computers with appropriate specifications is necessary for the successful implementation of current web 2.0 products, such as web-based OSLMS. According to Thompson and Pwadura (2014), the successful use of OSLMS relies on the presence of

sufficient computing resources. Adeleke (2017) identified cost, appropriate hardware, and software as factors that contribute to the effective implementation of OSLMS. The researcher aims to examine the access and ease of use of open-source library management software among librarians in university libraries in North-Central Nigeria.

Statement of the Problem

Despite recognising the substantial benefits of Open Source Library Management Systems (OSLMS), Nigerian university libraries persist in employing manual procedures for their day-to-day operations. This continued reliance on manual methods persists despite significant investments in librarian training, essential for the effective adoption of OSLMS. A prominent challenge is the inadequate mechanisms facilitating convenient access to OSLMS. This deficiency severely hampers the widespread adoption and efficient utilisation of OSLMS within university libraries in Nigeria's north-central geopolitical zone.

Literature suggests that access to OSLMS significantly influences its ease of use; it is extensively studied in developed countries but underexplored in developing nations like Nigeria. This research endeavours to bridge this knowledge gap by specifically examining the influence of access on the ease of use of OSLMS among librarians in university libraries in North-Central Nigeria.

Objectives
i.   ascertain the extent to which librarians access OSLMS in university libraries;
ii.   determine the level of the ease-of-use of OSLMS by librarians in the university libraries

Research Questions
i.   To what extent do librarians access OSLMS in university libraries?
ii.   What is the level of ease-of-use of OSLMS by librarians in university libraries?

Hypothesis
H_{O1}. There is no significant relationship between access and the ease-of-use of OSLMS

REVIEW OF LITERATURE

Access is the ability of the librarians to gain entry into OSLMS for their services in the universities library. Access could be achieved through adequate Internet services, bandwidth, power supply, hardware and password. Access, to a large extent, determines usage of open source software, this is because even if library software for library management are available but with limited access, the purpose for which the software were acquired will be defeated. Nwachukwu, et al. (2014) describe accessibility as the degree to which OSLMS can be accessed and used by a wide range of library staff. It can also be described as the capability of a library staff to access the functionalities of the system and its possible merits. The software for managing library could be available and not accessible by the staff, these are two different things all together. Whatsoever is available and yet unreachable is useless. Thus, if the open source software is easily accessible, it stands a higher chance of being used by the library staff. Onwukanjo and Men (2017) expressed that information resources could be present in the library, but users might not be able to access

them based on some reasons: improper organisation, cataloguing, classification, indexing, and abstracting. However, with the advent of the internet, accessibility is now being redefined and it is expected that there should be easy access to available library resources. Vrana (2014) opined that in an era of highly commercialized access to information materials, every kind of access to information resources that are charge-free is welcome. Onwukanjo and Men (2017) expressed that Information resources that have to be paid for have become a major barrier in teaching and research. This is basically due to high rates of annual journal subscriptions which many libraries consider unaffordable. The study further revealed that as the fiscal conditions of libraries and universities around the world worsen, the Open Access (OA) initiative was seen as a possible solution. Two things fostered the success of the OA and these were; the internet's role in making dissemination of information easy and the publishers' long history in producing, disseminating, and archiving large volumes of peer-reviewed scholarly articles (Onwukanjo & Men, 2017).

Accessibility to open source software library management system could be hindered where there is a lack of reliable internet access, poor power supply, inadequate functional computer systems, and poor technical know-how of users of the OSS in the library. Access to OSLMS is highly vital and should not be prevented by any situation either through the libraries to its staff or software developers to the libraries. Its accessibility should not be hindered; as easy and good access to it will improve its uses in university libraries. Accessibility of open source software library management system is the process of making open source software readily available and reachable for library management system (Nwachukwu, et al. 2014). According to Odunlade (2017), contemporary librarians should not be seen as just custodians of library items but rather as individuals who actively use and disseminate knowledge. For library staff to proficiently use OSLMS, they must possess sufficient computer skills and knowledge of its operation (Abbas & Song, 2020).

Access refers to the extent to which a resource, service, or product can be easily reached and utilised by a large number of individuals. It can be viewed as the ability to access open source software with little or no stress. Accessibility of open source software library management system is an important recurring theme in the literature (Ternenge & Kashimana, 2019). According to Aguolu and Aguolu (2002, as cited in Ternenge and Kashimana, 2019), open sources software may be available in the library but the library staff may not be able to lay hands on them. The more accessible library software are, the more likely they are to be used.

Ease of use is a fundamental idea that outlines how simple it is for customers to utilize a product. It is a common concept that is used to address the simplicity and convenience with which a certain system or software can be engaged and interact with. Camilleri and Camilleri (2019) stated in their study that ease-of-use is the term used for describing users' perspectives on how much a system or software is free of effort when used. Usability is a crucial aspect of software quality, as it focuses on creating interactive software applications that effectively fulfil user requirements. A system that has the necessary degree of usability is anticipated to be effective, efficient, engaging, tolerant of errors, and simple to learn (Russ & Saleem, 2018). Lubua (2019) defines usability as the state in which a system meets the necessary circumstances for users (namely librarians) to carry out jobs successfully, securely, and efficiently. According to Vera and Edore (2015), the degree of user skills has an impact on the usability, or ease-of-use, of a system. The research done in Nigeria by Egunjobi and Awoyemi (2012) found that system usability is

influenced by aspects such as ease of use and the extent of functions. Egunjobi and Awoyemi (2012) and Vera and Edore (2015) shared the belief that the simplicity of use, also known as usability, has an impact on the utilisation of systems in developing nations, with a specific focus on Africa. However, the extent of its influence on user satisfaction in the Tanzanian context and library management systems is still uncertain.

METHODOLOGY

The study employed a descriptive research design. The research population consisted of 301 librarians from both federal and state universities in North-Central Nigeria. The study included all 301 librarians, employing a total enumeration (census) sampling approach. The research instrument utilised was the Access and Ease-of-Use of OSLMS by Librarians Questionnaire (AEUOSLMSLQ).' The questionnaire underwent rigorous development, including content validation, and achieved a satisfactory reliability coefficient of 0.81, as assessed using Cronbach's alpha. To address the study's objectives, descriptive statistics, including frequency, percentages, mean, and standard deviation, were computed from the survey data. Additionally, the Pearson Product Moment Correlation Coefficient was employed to examine the relationship between librarians' access to OSLMS and the ease-of-use of the software, with significance tested at the 0.05 level. The analysis was conducted using the latest version of the Statistical Package for the Social Sciences (SPSS), allowing for comprehensive data examination and interpretation.

RESULTS AND DISCUSSION

Research Question 1: To what extent do librarians access OSLMS in university libraries in North-Central Nigeria?

Table 2: Extent to which librarians access OSLMS.

Access to OSLMS	Very High	High	Low	Very Low	Mean	Std.
Availability of computer Hardware and Software	173	96	11	10	3.49	.73
Password	178	97	6	9	3.53	.69
Availability of open source library management software	184	91	10	5	3.57	.65
Availability of networking infrastructure and facilities	155	109	17	9	3.41	.74
Availability of reliable power supply	153	115	13	9	3.42	.72
Operational retrieval skill of librarians	180	94	8	8	3.54	.69
Awareness of the concepts of OSLMS for library management software	177	90	13	10	3.50	.74
Access is made available at the mercy of the institutional policies	192	79	10	9	3.57	.71
Availability of Internet services	204	75	9	2	3.66	.57

High-Capacity server machine	184	94	11	1	3.59	.58
Dedicated Bandwidth	184	93	10	3	3.58	.61
Aggregate Mean					**3.53**	**.68**
Criterion Mean					**2.50**	

Table 2 shows that with an aggregate mean of 3.53(Std.= .68) greater than the criterion mean of 2.50, it can be concluded that the extent to which librarians access open source library management software in university libraries in North-Central Nigeria is high. The majority of the respondents appear to feel librarians have access to open source library management software with the aid of the availability of Internet services, high-capacity server machines, dedicated bandwidth, availability of open source library management software, availability of institutional policies, operational digital skills of librarians, Passwords, awareness of the concepts of OSLMS for library management software, availability of computer hardware and software, availability of reliable power supply, and availability of networking infrastructure and facilities. On the whole, the aggregated average score of 3.53 reveals that librarians' access to open source library management software is high.

Research Question 2: What is the level of ease of use of OSLMS by librarians in university libraries in North-Central Nigeria?

Table 3: Ease-of-use of open source library management software.

Statements	Very High	High	Low	Very Low	Mean	Std.
It is easy to use the cataloguing module for cataloguing library information resources	147	112	18	13	3.36	.79
It is easy to search for books and library materials	143	107	23	17	3.30	.85
It is easy to import/export data	141	144	3	2	3.46	.56
It is easy to order for books and library materials	166	107	10	7	3.49	.68
It is easy to receive new arrivals in the library	143	125	13	9	3.39	.72
It is easy to keep track of those materials purchased	151	117	14	8	3.42	.71
It is easy to use the circulation module for charging and discharging information resources	159	92	20	19	3.35	.87
It is easy to use the patron module to register library patrons	135	128	15	12	3.33	.76
It is easy to charge overdue	160	116	9	5	3.49	.65
It is easy to access Web based OPAC system	159	114	12	5	3.47	.66

It is easy to use the OPAC module to search and retrieve information	186	84	12	8	3.54	.71
It is easy to generate and print barcodes/accession numbers	156	105	15	14	3.39	.80
It is easy for serials control and management	129	112	20	19	3.24	.85
It is easy to use the administration module to prepare reports on book processing and service provision	162	114	8	6	3.49	.66
It is easy for database backup	140	126	16	8	3.37	.72
Aggregate Mean					**3.41**	**.78**
Criterion Mean					**2.50**	

From Table 3, the aggregate mean score of 3.41 is greater than the criterion mean of 2.50, hence it is concluded that there is a high level of ease of use of OSLMS in North-Central Universities libraries.

Testing of Hypothesis

H_{01}. There is no significant relationship between access and the ease of use of OSLMS.

Table 3: Influence of Librarians' Access on the Ease-of-use of OSLMS

	Pearson Correlation	**Sig. (2-tailed)**	**N**
Access to OSLMS	1	.503	290
Ease-of-Use of OSLMS	.503	1	290

The Pearson correlation coefficient between access to Open Source Library Management Software (OSLMS) and ease-of-use is 0.503. The significance value (Sig. 2-tailed) is 0.000, indicating a significant relationship between librarians' access to OSLMS and its ease-of-use. Consequently, the null hypothesis is rejected, suggesting that access significantly influences the ease-of-use of OSLMS. This implies that changes in access may correspond to changes in the ease-of-use of the software.

Discussion of Findings

The Results revealed that the librarians' access to OSLMS is high. Access includes Internet services, server machines, bandwidth, OSLMS, institutional policies, operational digital skills of librarians, passwords, awareness of the concepts of OSLMS, hardware and software, reliable power supply, and networking infrastructure and facilities. This finding is in agreement with that of Sejane (2017), who found that access to OSLMS can be achieved where there is reliable internet access, electricity supply, computer systems, and digital skills of the users (librarians) of the OSLMS in the library. This finding supports that of Stieninger and Nedbal (2014), who noticed that the technical requirements to necessitate access include computers, network connectivity, bandwidth, system accessories, etc.

The finding revealed that the usability of OSLMS at university libraries in North-Central Nigeria is very high. Consistent with Lubua's (2019) research, ease-of-use is achieved when the system offers favourable circumstances for users (librarians) to carry out activities with effectiveness, safety, and efficiency. Based on the results, the system should possess the necessary degree of usability, which means it should be capable of being effective, efficient, engaging, error-tolerant, and highly user-friendly. This is in line with Ibrahim (2015), who asserted that academic libraries have recently experienced increased usability, stability, and acceptance of OSLMS. Consequently, this has resulted in a significant level of usage by librarians, library staff, and users of academic libraries in Nigeria.

The finding showed that there is a relationship between access and ease-of-use of OSLMS. This finding conformed to that of Singh and Kaur (2016) who described that improved access to OSLMS positively correlated with user satisfaction and ease-of-use among librarians and patrons. It is the capability of a library staff to access the functionalities of the system and its possible merits. It also collaborates Sejane (2017), who found that access to OSLMS is utilised when there is reliable internet, supply of electricity, computers, and digital skills of the librarians of the OSLMS in the library.

Conclusion

This study investigated the relationship among access, and ease-of-use of OSLMS by librarians in university libraries in North-Central, Nigeria. The study concluded that access to the ease-of-use of OSLMS is high. Librarians' ease-of-use of OSLMS is high, and the librarians' access have a significant influence on the ease-of-use of OSLMS. The study has empirically established that access is predictor of ease-of-use of OSLMS by librarians in university libraries in North-Central, Nigeria.

Recommendations
i)   The librarians should embrace other training outlets such as workshops, seminars, in-house training programmes, and conferences to sustain their high level of ease of use of OSLMS.
ii)   There is a need to continue upgrading the hardware and software to perform tasks effectively, safely, efficiently, engaging error tolerance and easy to use.
iii) Ensure that whoever is contracted to provide consultancy on the installation of OSLMS in libraries does not only install the system but also adequately trains the end-users, who are library staff on how the system works and how to upgrade and back-up the system.

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