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Digital Competencies of Librarians in Managing University Electronic Libraries in North-East Nigeria

[1] Damaris Joseph
E-Mail: damarisjoseph20@gmail.com
Modibbo Adama University, Yola

[2] Maria Kannie Pantuvo
E-Mail: mariakanny@gmail.com
Taraba State University

[3]Fibi Michael Minakaro
E-Mail: fibiminakaro@gmail.com
Adamawa State Polytechnic

Abstract

This study investigates the digital competencies of librarians in managing university electronic libraries in North-East Nigeria, alongside challenges and strategies for improvement. The study adopted a descriptive survey design, Data were collected from 166 librarians across eleven universities in the Northeast using structured questionnaires. Descriptive statistics were used which provided insight into librarian's digital competencies, as well as challenges encountered, and proposed strategies for enhancing electronic library management. The Results of the study indicated that a significant digital competency gap exists between librarians in federal and state universities, with challenges including inadequate infrastructural facilities, lack of essential software subscriptions, and a scarcity of trained system librarians. Despite these challenges, the study found that librarians agreed on several strategies for improvement, such as infrastructural upgrades, enhanced training programs, and policy development. This research underscores the critical role of electronic libraries in academic settings and the need for targeted strategies to overcome existing challenges. It calls for increased investment in professional development, infrastructure, and technology, alongside the implementation of comprehensive management policies. By addressing these areas, the study lays a foundation for future research and policy-making aimed at optimizing university electronic libraries in developing regions, providing a blueprint for similar contexts grappling with the digital transformation of library services.

Keywords: Electronic Library Management, Librarian Competencies, University Libraries,

Introduction

In the contemporary academic landscape, the significance of electronic libraries in facilitating access to a vast array of digital resources cannot be overstated. The movement towards digital libraries marks a significant shift in how information is stored, accessed, and shared. In regions

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such as North-East Nigeria, where the incorporation of digital technologies into university libraries is underway, librarians must possess digital competencies to navigate the opportunities and challenges presented by this transition. This article delves into the digital competencies possessed by librarians, the challenges encountered, and proposed strategies for enhancing electronic library management.

Purpose of the Study

The general purpose of the study is to evaluate Librarians' competencies in managing university electronic libraries in Northeast Nigeria. Specifically, the study will;

1. Identify digital competencies possessed by librarians in the management of university electronic `libraries in North-east Nigeria;

2. Identify challenges of librarians in the management of university electronic libraries in North-east Nigeria; and

3. Identify strategies for improving the competencies of Librarians in the management of university electronic libraries in Northeast Nigeria.

Hypotheses

HO_1: There is no significant difference between the mean rating/response of federal and state university librarians on the staff competencies in managing university electronic libraries in North-east, Nigeria.

HO_2: There is no significant difference between the mean rating/response of federal and state universities on the challenges of librarians in the managing of university electronic libraries in North-east, Nigeria.

Literature Review

Many researches have been conducted, which revolved around the issue of e-libraries in universities and outside the academic environment. However, some of these studies were reviewed as follows:

Gani (2014) investigated the process of managing university e-libraries in the Northwest zone of Nigeria. A descriptive survey design was adopted. Focus group method, eight (8) University Librarians (40) System librarians, and System analysts from eight (8) universities in the Northwest of Nigeria were used as a sample size of the study. Questionnaire was the instrument for data collection.

Additionally, Ugwu and Onyegiri (2013) examined the problems encountered in managing electronic information resources (EIRs) in the University of Nigeria, Nsukka (UNN) Library. A case study design was employed. The population of the study consisted of 151 staff of the

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University library. Questionnaire was the main instrument used for data collection. Out of the 151 copies of the questionnaire administered to the respondents, only 95 copies were correctly filled and used for this study. The data collected were analyzed using mean (x) and standard deviation (SD), while a t-test was used to establish the significance of the responses of the library staff on the dimensions of the problems of managing EIRs in the university library. The management problem areas identified in this study consisted of university policies or practices, funding, staffing, and information technology infrastructure. Strategies for enhancing effective management of electronic information resources were identified, and recommendations based on the findings of the study were also made. The method of data analysis is suitable for the present study. The study differs significantly in content while Ugwu investigated the management of the resources, the present study focuses on the management of electronic libraries and resources. Both studies differ significantly in scope and area of study.

Consequently, Gwang (2010) conducted a study on the influence of organization on library resource provision in university libraries in the North Central Zone. The research design adopted for this work was ex post facto. The population consisted of Ninety-nine librarians in the University libraries in this zone. Questionnaire which was validated by experts, was the main instrument used for this study. Data collected were analyzed using descriptive statistics and regression analysis. The results revealed that library resources were provided to a small extent in the university libraries in the zone. It also showed that organization has no significant influence on the provision of library resources. Practical Implications: the absence of organizational influence on the provision of library resources in university libraries impedes the development of the libraries. The study of Gwang (2010), served as a framework for the present investigation but differs in the sense that the present study has to do with more than organization as a management variable, the instrument for data collection is also appropriate for the study. The study differs in terms of scope and area of study.

Another relevant empirical study was that by Ugwu (2011), which examined the relationship between organizational factors and knowledge management applications to user-centred services in federal university libraries in Nigeria. The study used a correlational survey design and the population of the study consisted of 456 librarians working in federal university libraries in Nigeria. Data for the study were collected by means of the questionnaire which had been pretested using Cronbach Alpha procedure. From the 456 copies of the questionnaire distributed, 354 were returned giving a response rate of 78%. Mean, Standard Deviation, Multiple Regression Analysis and Pearson Product Moment Correlation Coefficient were used to analyze the data collected. The findings showed that the knowledge management activities being used to provide user-centred services in federal university libraries in Nigeria were mainly in areas of identifying user needs, acquiring knowledge resources based on user needs, and disseminating the knowledge resources to users. Acquisition of knowledge resources was the greatest area of knowledge management activity, while top management leadership and collaboration were the greatest factors required for knowledge management application to user services. These factors accounted for 54% level of knowledge management application to user-centred services while the remaining 46% was unexplained. Among the aspects of these factors that were found to be important to knowledge management application were developing organizational vision and goals, building trust among

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librarians, creating a conducive organizational learning environment, and developing a good system of communication. Moreover, the findings showed that top management had the strongest association with knowledge management applications while human resource policy had the weakest association. The study therefore recommended that a knowledge management strategy should be developed for federal university libraries in Nigeria. The studies differ in content and area of study, Ugwu's study served as a framework as an instrument for data collection is the same.

To examine the organizational factors that affect library resource provision in university libraries, Gwang (2011) focused his study in the North-central zone of Nigeria. The research design employed was a descriptive survey. The population of the study consisted of all the ninety-nine librarians and twenty-five library officers in the university libraries. The instrument for data collection was mainly questionnaires which were self-administered to the respondents. Data collected were analyzed using descriptive statistics and regression analysis. The results revealed that the university libraries engaged to a large extent ($\bar{x}$=3.13) in organization activities aimed at fulfilling the goals of the parent institutions which broadly include planning ($\bar{x}$=2.51), organization ($\bar{x}$=3.14) and evaluation ($\bar{x}$=2.65). The combined managerial variable of managing, organization, and evaluation have influence at the provision of library resources in federal, state, and private university libraries. An emphatic empirical evidence is that planning, organization, and evaluation combined to significantly influence library provision in university libraries in the North central zone of Nigeria. The present study adopted the same research design, the methodology was appropriate, and the content did not differ significantly. The present study differs in scope and area of study.

Materials and Methods

Drawing on a comprehensive survey conducted across eleven universities in North-East Nigeria, this study employs a descriptive survey design to capture a snapshot of the current state of electronic library management. It engages with a population of 166 librarians, leveraging on structured questionnaires to gather data on the competencies of library staff, the challenges encountered in the day-to-day management of electronic libraries, and the strategies proposed to overcome these challenges. Through descriptive and inferential statistics, the study offers a nuanced understanding of the landscape of electronic library management in the region.

This study adopted the descriptive survey design, the population of the study consisted of 166 librarians drawn from eleven (11) universities in North-East Nigeria (Establishment record of each of the universities). This population comprised a total number of librarians in 2022/2023 academic session in the universities studied. Census sampling was adopted; the population of 166 librarians was used. To ascertain the competencies possessed by staff in managing university electronic libraries in North-East Nigeria, a structured questionnaire titled "University Electronic Library Management Questionnaire (UELMQ)". The data generated were analyzed using descriptive and inferential statistics, specifically mean and standard deviation were used to answer research questions 1, 2, and 3.

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Results

The data obtained for this study were analyzed and presented based on the research questions and hypothesis. Out of 166 questionnaires distributed, 162 were returned and found suitable for data analysis, thereby, giving a percentage return rate of 97.5%. Analysis was based on the returned questionnaire as indicated on Table 1.

Table 1: Return Rate of the Instrument by the Institutions

University	No. of Questionnaire Issued	No. of Questionnaire returned	Percentage return rate
FUTY	09	09	6%
FUG	10	08	5%
FUW	13	13	8%
ATBU	26	26	16%
UNIMAID	52	52	32%
FUK	10	10	6%
YSU	09	08	5%
TSU	05	03	2%
ADSU	08	08	5%
GSU	12	12	7%
BASU	13	13	8%
Total	166	162	97.5%

Source: *Researcher's Survey. 2024*

Research Question 1:

What are the competencies possessed by staff in managing university electronic libraries in North-east Nigeria?

The result of the response to find out the competencies possessed by staff in managing university electronic library in Northeast Nigeria are presented in Table 2.

Table 2: Mean Scores and Standard Deviation on Competencies Possessed by Staff Managing Federal and States University Electronic Libraries in Northeast Nigeria

S/n	Item	Federal			State		
		$\underline{X}$	SD	RMK	$\underline{X}$	SD	RMK
1	Creation of databases	3.31	0.72	Agreed	2.36	0.53	Disagreed
2	Use of digitization software	3.31	0.72	Agreed	2.32	0.47	Disagreed
3	Design of information system	3.31	0.72	Agreed	2.30	0.51	Disagreed

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4	Evaluation of information system	3.31	0.72	Agreed	2.30	0.51	Disagreed
5	Web navigation	3.53	0.75	Agreed	2.25	0.54	Disagreed
6	Creating and updating OPAC	3.53	0.75	Agreed	2.25	0.54	Disagreed
7	Searching library databases	3.53	0.75	Agreed	2.32	0.56	Disagreed
8	Network management	3.53	0.75	Agreed	2.30	0.51	Disagreed
9	Maintenance of IT equipment	3.53	0.75	Agreed	2.30	0.51	Disagreed
10	Troubleshooting	3.53	0.75	Agreed	2.32	0.56	Disagreed

Source: *Researcher's Survey. 2024*

The result presented in Table 2 shows a total agreement of different competencies possessed by staff in managing Federal University electronic libraries in Northeast Nigeria with mean scores ranging from 3.31 to 3.53 and standard deviation ranging from 0.72 to 0.75

On the other hand, the result further shows a total disagreement of competencies possessed by staff in managing State University electronic libraries in Northeast Nigeria with mean scores ranging from 2.25 to 2.26 and standard deviation ranging from 0.47 to 0.96.

The hypotheses show there is no significant difference between the mean rating/response of federal and state university librarians on the extent of university staff competencies in managing universities electronic libraries in North-east, Nigeria

HO_1:

There is no significance difference between the mean rating/response of federal and state university librarians on the staff competencies in managing university electronic libraries in North-east, Nigeria.

Table 3: z-test on the difference between mean rating/response of federal and state university librarians on staff competencies in managing universities electronic libraries in North-east, Nigeria

University Status	N	Mean	SD	df	Z_{cal}	Z_{tab}	decision
Federal	118	34.37	7.09	161	11.65	0.99	Reject H_0
State	44	23.00	4.82				

Source: *Researcher's Survey. 2024*

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The data in Table 3 showed that the mean rating response of federal university librarians is 28.69 ($SD = 3.53$), while that of state university librarians is 30.55 ($SD = 2.77$). The computed z-test of -3.50 at $df(161)$ was found insignificant. However, since the z-cal of -3.50 is less than the z-tab on 0.99, the hypothesis of no significant difference was accepted. Thus, there is no statistically significant difference between mean rating/response of federal and state university librarians on the challenges to librarian in managing electronic libraries in North-east, Nigeria. The hypothesis of no difference is therefore retained.

Research Question 2:

What are the challenges to librarian in the management of university electronic libraries in Northeast Nigeria?

The result of the response to find out the challenges of librarians in the management of university electronic libraries in Northeast Nigeria is presented in Table 4

Table 4: Mean score and standard deviation on the challenges to librarians in the management of Federal University electronic libraries in Northeast Nigeria

S/n	Item	Federal			State		
		$\underline{X}$	SD	RMK	$\underline{X}$	SD	RMK
1	Inadequate infrastructural facilities.	3.97	0.18	Agreed	3.98	0.15	Agreed
2	Non-subscription for library software.	3.97	0.18	Agreed	3.95	0.30	Agreed
3	Unavailability of system librarian.	3.09	0.99	Agreed	3.09	1.34	Agreed
4	Lack of adequate technical skills i.e troubleshooting, installations, and network management	3.09	0.99	Agreed	3.90	0.36	Agreed
5	Lack of training of staff by the library management.	2.65	1.48	Agreed	3.89	0.54	Agreed
6	Poor of funding of electronic libraries	3.97	0.16	Agreed	3.91	0.36	Agreed
7	Poor Planning Practices of Electronic Libraries	3.97	0.16	Agreed	3.91	0.36	Agreed
8	Poor organization practices of electronic libraries	3.97	0.16	Agreed	3.91	0.36	Agreed

Source: *Researcher's Survey. 2024*

Result on Table 4 indicate that the respondents in the federal universities agreed with the item listed as challenges in the management of university electronic libraries with the grand mean ranging from 2.65 to 3.97 and standard deviation ranging from 0.16 to 0.99.

On the other hand, results indicate that the respondents in the state universities agreed with the item listed as challenges in the management of university electronic libraries with the grand mean ranging from 3.09 to 3.98 and standard deviation ranging from 0.15 to 1.34.

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The hypotheses show there is no significant difference between the mean rating/response of federal and state universities on the challenges to librarians in managing university electronic libraries in North-East, Nigeria.

HO_2:

There is no significant difference between the mean rating/response of federal and state universities on the challenges of librarians in the managing of university electronic libraries in North-east, Nigeria.

Table 5: z-test on the difference between mean rating/response of federal and state universities on the challenges to librarians in managing university electronic libraries in North-east, Nigeria.

University Status	N	Mean	SD	df	Z_{cal}	Z_{tab}	decision
Federal	118	28.69	3.53	161	-3.50	0.99	Accept H_0
State	44	30.55	2.77				

Source: *Researcher's Survey. 2024*

The data in Table 5 showed that the mean rating response of federal university librarians is 28.69 ($SD = 3.53$), while that of state university librarians is 30.55 ($SD = 2.77$). The computed z-test of -3.50 at $df\,(161)$ was found insignificant. However, since the z-cal of -3.50 is less than the z-tab on 0.99, the hypothesis of no significant difference was accepted. Thus, there is no statistically significant difference between mean rating/response of federal and state university librarians on the challenges to librarian in managing electronic libraries in North-east, Nigeria. The hypothesis of no difference is therefore retained.

Research Question 3:

What are the strategies for improving the management of university electronic libraries in Northeast Nigeria?

The result of the response to find out the strategies for improving the management of university electronic libraries in Northeast Nigeria is presented in Table 6.

Table 6: Mean scores and standard deviation on the strategies for improving the management of federal and state university electronic libraries in Northeast Nigeria

S/n	Item	Federal			State		
		$\underline{X}$	**SD**	**RMK**	$\underline{X}$	**SD**	**RMK**
1	Improving infrastructural facilities by procuring new technologies.	4.00	0.00	Agreed	3.93	0.25	Agreed
2	Subscription to free online database i.e Koha	4.00	0.00	Agreed	3.95	0.21	Agreed

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3	Make systems librarian head of E-library.	4.00	0.00	Agreed	3.93	0.33	Agreed
4	Training of librarians in the electronic library through the acquisition of degrees, workshops, and seminars.	4.00	0.00	Agreed	3.98	0.15	Agreed
5	Adequate implementation of University budgetary allocations i.e the 10% statutory allocation by the University to the Library	4.00	0.00	Agreed	3.98	0.15	Agreed
6	Improving clearly written policies by the library	4.00	0.00	Agreed	3.95	0.21	Agreed
7	Improving organizational practices to ease access to users by the libraries.	4.00	0.00	Agreed	3.95	0.21	Agreed

Source: *Researcher's Survey. 2024*

Table 6 shows the mean responses of the respondents from the federal universities on the strategies for improving the management of their libraries. The result indicates a mean score as 4.00. This shows that the respondents agreed to all the strategies for improving the management of the university electronic library.

On the other hand, the result shows the mean responses of the respondents from the State Universities on the strategies for improving the management of their libraries. The result indicates mean scores ranging from 3.93 to 3.98 and standard deviation ranging from 0.15 to 0.25. This shows respondents agreed with the item as proposed strategies for improving the electronic libraries.

Discussion of Finding

The findings of this research underscore a significant disparity in competencies between staff in federal and state universities, pointing to a broader issue of resource allocation and prioritization. Challenges such as inadequate infrastructural facilities, the non-subscription of essential library software, and the scarcity of trained system librarians emerge as critical barriers to the effective management of electronic libraries. Against this backdrop, the study proposes a series of strategies aimed at addressing these challenges, from improving infrastructural facilities to enhancing the training and development of library staff.

This article contributes to the ongoing discourse on the digital transformation of libraries, offering valuable insights into the specific context of North-East Nigeria. It highlights the imperative for targeted interventions to bridge the competency gap among library staff and underscores the need for a strategic approach to the management of electronic libraries. By examining both the challenges and the potential strategies for improvement, this study lays the groundwork for future research and policy-making aimed at optimizing the management of university electronic libraries in developing regions. The hypothesis on the difference between the mean responses to the challenges from Federal and State universities has no significant difference. The findings and recommendations presented herein not only illuminate the current state of electronic library

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management in North-East Nigeria but also offer a template for other regions grappling with similar challenges in the digital age.

Conclusion

Considering the result of the survey on the competencies possessed by staff in managing university electronic libraries in North-East Nigeria, the following conclusive evidence was drawn:

Federal university's electronic libraries are more planned and more organized, the staff of federal university electronic libraries are more competent and Funding is not an issue in federal university libraries.

On the issue of challenges and strategies, all the eleven (11) universities studied in the Northeast agreed on the challenges and proposed strategies which are: improving infrastructural facilities by procuring new technologies, subscription to free online database Koha, making systems librarian head of E-library, training of librarians in the electronic library through the acquisition of degrees, workshops and seminars, adequate implementation of University budgetary allocations i.e the 10% statutory allocation by the University to the Library, improving written policies by the library and improving organizational practices to ease access to users by the libraries.

Recommendations

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

1. Enhanced Training and Professional Development: The study highlights a significant disparity in competencies between staff in federal and state university libraries. It is recommended that all universities, regardless of their federal or state status, should invest in continuous professional development and training programs for their librarians.

2. Provide adequate infrastructural facilities: To address the challenge of inadequate infrastructural facilities, it is imperative to advocate for increased investment in infrastructure by university administrations or relevant government bodies. Also, exploring partnerships with governmental agencies, non-profit organizations, or private companies specializing in infrastructure development can leverage resources and expertise to address deficits more effectively.

3. Subscription of Essential Library Software: To overcome the challenge of non-subscription of essential library software, advocating for budget allocation specifically designated for software subscription is crucial. Highlighting the importance of these tools in enhancing library services, facilitating research activities, and improving user experience can garner support for necessary investments.

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