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**PRESERVATION AND CONSERVATION OF UNIVERSITY LIBRARY DIGITAL INFORMATION RESOURCES IN FEDERAL UNIVERSITY OF TECHNOLOGY MINNA AND IBRAHIM BADAMASI BABANGIDA UNIVERSITY LAPAI NIGERIA**

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**Abstract**

The aim of this study was to investigate the problems of preservation and conservation of library digital resources in Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai. Specifically, four research questions guided the study. It adopted a survey design and had a population of 74 professional and paraprofessional library staff from Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai. The study used the whole population of professional and paraprofessional as respondents. Seventy four (74) copies of the questionnaire were distributed but sixty (60) was returned, representing a return rate of 81%. The data collected were analyzed using percentages and four Likert scale was used. The findings of the study revealed that library staff agreed that preservation and conservation of digital information resources prolong their lifespan. Problems that militate against the preservation and conservation of digital information resources include lack of interest on digital information resources, temperature, inadequate computer systems, lack of computer experts to handle maintenance, computer system crash, lack of funds for routine maintenance, computer phobia, and fire outbreak. The study thus recommended budget for preservation and conservation of digital information resources and for educating library users on how to handle and use this modern information resources with care.

**INTRODUCTION**

Libraries in Nigerian Universities are battling with the issue of conservation and preservation of information resources. It is hindering the libraries from attaining their mission of providing the information needs of their users. Conservation and preservation of digital information

resources in university libraries is an issue which require urgent attention on a continued bases for effective digital library services. In university library, information resources are stored and made available to users in digital forms, and the services of the library are also made available electronically. These services are made available

frequently online and off line so that users can access electronic materials any time.

This refers to e-services which most university libraries are trying to embrace in the digital environment. Nwabueze and Urhiewhu, (2015) stated that libraries embrace the digital environment, their most crucial role is not that of only providing e-resources, but of establishing services that facilitate access to available information and the preservation and conservation of these resources.

### Concept of Digital Information Resources

Digital Information Resources (DIRs) connotes those information resources which before now were in print form, but currently found in non-print form (soft copy) and are accessible through computer machines and other corresponding ICT tools (Obaseki, Umeji & Krubu, 2010). Similarly, Digital Information Resources (DIRs) include music, games, stories, articles from magazines, published journals and books, encyclopedias, pamphlets, cartographic materials and other published resources that are in soft copies.

Digital Information Resources also often include sound animated graphics, pictures and movies. The aim of digitizing library materials is for preservation, conservation and for easy access by students, researchers and other users. Fabunmi, Paris and Fabunmi (2006) stated that digitization improves access to library resources, by digitizing library collections, information will be accessible to all instead of a group of researchers.

According to Nwabueze and Urhiewhu, (2015), digital projects allow users to search for collections rapidly and comprehensively from anywhere at any time. Digitization makes the invisible to be visible. Several users can access the same material the same time without hindrance. It also removes the problem of distance, as users do not have to travel to libraries that possess the hard copies of library materials before they can access and use such materials. The availability and use of Digital Information Resources (DIRs) can facilitate increase and ease processing and access of information to library users.

The enthusiasm of University library patrons to access digital resources anywhere and at all-time has made it inevitable to consider alternative option in reaching out to University library users. Since the ultimate goal of University library, is to deliver service to the users in relevant subject area, appropriate format and in a timely fashion, it has become necessary therefore to adopt digital technologies for information production, distribution and storage and preservation of e-resources in tertiary institution libraries in order to be able to meet the information needs of users at all time.

However, despite the advantages of Digital Information Resources (DIRs) usage in university libraries; several literatures have noted that there are a number of generally recognized problems that hinder the effective utilization of the DIRs among students, staff and other researchers that use the library. The issue of lack of effective preservation and conservation of digital information

resources. These problems have greatly affected creativity and innovation in many university libraries (Nwabueze & Urhiewhu, 2015).

Some of these libraries have adequate digital resources which are greatly being under-utilized largely due to lack of effective preservation and conservation techniques.

#### **Statement of the Problem**

The use of electronic technologies to produce, store, manipulate and distribute information of all kinds is one of the great achievements of the information age. The availability and use of Digital Information Resources (DIRs) can facilitate increase and ease processing and access of information to library users.

However, despite the advantages of Digital Information Resources (DIRs) usage in university libraries; several literatures have noted that there are a number of generally recognized problems that hinder the effective utilization of the DIRs among staff and students. The problem of conservation and preservation of digital information resources are some of the major factors affecting university libraries today. These have greatly affected creativity and innovation in libraries.

Preliminary investigations carried out by the researchers in Ibrahim Badamasi Babangida University Lapai and Federal University of Technology, Minna found out that there are factors militating against the conservation and preservation of digital library information resources. One wonders what factors are responsible for this problems of conservation and preservation of digital library

resources. It is on the backdrop that the researchers intends to find out the conservation and preservation of University library digital information resources in Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai Nigeria

#### **Research Questions**

1. What necessitate the need to preserve and conserve digital information resources in Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai?
2. What are the preservation and conservation techniques used on digital information resources in Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai?
3. What problems militate against conservation and preservation of digital information resources in Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai?
4. What are the strategies applied for preservation and conservation of digital information resources in Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai?

#### **LITERATURE REVIEW**

##### **Preservation and Conservation Techniques on Digital Library Resources**

For some decades now, there has been a revolution in information storage media. Data is now stored electronically in digitized formats. Computers are presently very basic to library functions and services. Mostly

they act as gateways in libraries and information can only be accessed, nay retrieved through them. Physical materials are of lesser interest to the end – users in an environment where information is electronically accessible (Victoria, William and Frederick, 2013).

The problem of storage, and practically that of preservation of information is removed from the point of use (where it has traditionally been located) to the point of supply. The information producer bothers about location of extensive databases for storage and preservation from where users can access whatever they needed.

According to Sunday (2015), the following are some of the preservation and conservation techniques used in university libraries

1. Installation of thermometer at the wall of university libraries to regulate the temperature as at when necessary;
  2. The use of humidifier to regulate the atmospheric moisture;
  3. Installation of fire extinguisher in case of fire outbreak;
  4. Regular dusting of computers by using soft and fine brush;
  5. Maintenance of optimum storage condition is necessary to control the propagation of biological agents such as insects, rodents and moulds.
  6. Fumigation and constant mopping of floor to prevent any destructive microorganisms.
  7. All library staff should be trained on how to handle digital information resources and likewise the library users;
- Preservation policies for the university libraries should be

adhered to at all-time especially as regard to preservation and conservation of digital information resources;

9. The university libraries should ensure that food items and water are prohibited in the University library premises to avoid ants and other agents of destruction affecting computers chairs and tables.
10. Air conditioning system and fans for cooling the library information resources and the users are very essential in university libraries for digital preservation and conservation as well.

### Roles of Digital Preservation and Conservation in Libraries

The main roles of digital preservation and conservation according to Lakshminarasimhappa and Veena (2014) is to achieve the following objectives:

1. Providing continued access to digital material for both born digital and digitized material.
2. Ensuring authenticity of preserved digital material.
3. Preserve physical media to avoid damage/ deterioration by ensuring an environmental control.
4. Changing the digital information in to newer and fresher format, if it is necessary.
5. Achieving co-ordination of all efforts that are undertaken for preservation globally in order to achieve more synergy, to avoid redundancy and reduce cost. This provides an effective infrastructure for collaboration by connecting different networks, institutions and individuals that are working in this field.

information from machine to human-readable form or the non-availability of such important gadget.

Institutions may face legal obstacles in fulfilling their mandates to preserve valuable information when copy right or licensing agreement prohibits duplication or local storage of digital information. These are instances where certain conditions have to be fulfilled before certain information bearing resources can be harnessed, processed, and preserved by library and information centres. For instance, there are certain places that photographs cannot be taken and access cannot be granted except official permission is granted.

Challenges could also arise when repositories need to access technical resources and expertise knowledge that support digital preservation in order to maximize the benefits effectively.

Technical and expertise knowledge are often shrouded in mysteries and are often not easy to come by. Anasi (2010) indicated inadequate funding of the library and by extension digital projects as some of the challenges of digital preservation of library resources. Lack of infrastructures is yet another big challenge. Another major challenge of digital preservation of

library resources is the issue of lack of standard policy protection for intellectual properties.

Other challenges identified by digital opportunity Task Force (DOT) are:

- i. Socio-economic inequalities
- ii. Lack of locally created content
- iii. Inability to derive economic and social benefits from information intensive activities.

## METHODOLOGY

The study adopted survey research. A total of 74 professional and para-professional staff of Federal University of Technology, Minna and Ibrahim Badamasi Babangida University, Lapai served as the respondents of the study. However, because the population is not large and it is manageable, the whole population were used for the study.

Bernard (2012) supported this idea by asserting that if a population of a study is less than two hundred (200), the entire population should be used. Questionnaire was the instrument used for data collection. A total of 74 copies of the questionnaire were administered out of which 60 were returned and found usable. Data collected were analyzed using frequency counts and percentage. Four Likert scale type of measurement was used.

**Research Question One:** What are the reasons for preservation and conservation of digital library materials?

**Table 1:** Score responses of library staff on the reasons for preservation and conservation of digital library materials (N=60)

Reasons	Strongly agreed	Agreed	Strongly disagreed	Disagreed	Percentage (%)
Preservation and conservation of digital library material is cost effective	20 (33.3%)	30 (50%)	7 (11.7%)	3 (5%)	100%
Preserving digital materials guarantee the safe keeping and continued usage of information resources	25 (41.7%)	34 (56.7%)	1 (1.6%)		100%
Preservation and conservation of digital information resources allow digital materials to remain in circulation as long as possible	21 (35%)	37 (61.7%)	2 (3.3%)		100%
It eliminates the need for replacement resources	15 (25%)	40 (66.7%)	3 (5%)	2 (3.3%)	100%

Table 1 above shows the responses of library staff on the reasons for preservation and conservation of library materials in Federal University of technology Minna and that of Ibrahim Badamasi Babangida University Lapai respectively. From the table, the responses are preservation and conservation of digital library material is cost effective 50(83.3%), preserving digital materials guarantee the safe keeping and continued digital information resources 59(98.4%), preservation and conservation allow digital information materials to remain in circulation as long as possible 58(96.7%) and preservation and

conservation eliminates the need for replacement of resources 45(81.7%).

Majority of the respondents that is 81% and above agreed that there is need for preservation and conservation of digital information resources in University libraries. These findings corroborate that of Attahiru (2013) who studied Digital Preservation of Information Resources in Academic Libraries in Nigeria found that the need of digital libraries has ensured the emergence of global networked environment that has dramatically changed the face of libraries, their functions, services as well as their storage and delivery system.

### Research Question Two: What are the preservation and conservation techniques used in digital library?

The general view of library staff on preservation and conservation techniques used in digital libraries are presented in the table below.

**Table 2: Responses/views of library staff on the preserving and conserving techniques used in digital libraries (N=60)**

Preservation and conservation techniques	Very often	Occasionally	Never	Percentage (%)
Use of anti-virus to protect computers from corrupting	20(33.3%)	35(58.3%)	5(8.3%)	100
Provision of back up storage device	15(25%)	30(50%)	10(16.6%)	100
Provision of steady electricity supply	10(16.6%)	15(25%)	35(58.3)	100
Cleaning and dusting of computers	35(58.3%)	25(41.7%)	-	100
Enough computer engineers who will be maintaining the systems	37(61.7%)	22(36.7%)	1(1.7%)	100
Air conditions	15(25%)	40(66.7%)	5(8.3%)	100
Adequate security to prevent computer theft	46(76.7%)	14(23.3%)	-	100
Use of insecticides and insect repellent for library	24(40%)	33(55%)	3(5%)	100

Table 2 above shows the responses of library staff on responses/views of library staff on the preservation and conservation techniques used on digital information resources in libraries in Federal University of Technology Minna and that of Ibrahim Badamasi Babangida University Lapai respectively. From the table, the statements and responses are: anti-virus to protect the computers from corrupting 55(91.6%), provision of back up storage device 45(80%), provision of steady electricity supply 35(41.6%), cleaning and dusting of computers in the library 60(100%), enough computer engineers who will

maintain the systems 59(98.4%), air conditions 55(91.7%), adequate security to prevent theft of computer 60(100%) and use of insecticides and insect repellent for library, 58(95%).

Majority of the responses from the respondents that is 80% and above also agreed that the above mentioned preservation and conservation techniques in digital libraries are used very often and some occasionally in libraries of Federal University of Technology Minna and that of Ibrahim Badamasi Babangida University Lapai in preserving and conserving digital information resources.

### Research Question 3: what are the types of problems experienced in handling of digital information resources in the selected University Libraries?



**Preservation and Conservation of University Library Digital Information Resources**  
**Table 3: Responses/views of library staff on the problems experienced in handling digital information resources (N=60)**

Problems	Very often	Occasionally	Never	Percentage (%)
Lack of interest on digital information resources	40(66.7%)	18(30%)	2(3.3%)	100%
Temperature	30(50%)	20(33.3%)	10(16.7%)	100%
Inadequate computer systems	38(63.3%)	20(33.3%)	2(3.3%)	100%
Lack of computer experts to handle the maintenance	35(58.3%)	18(30%)	7(11.7%)	100%
Computer system crash	22(36.7%)	25(41.7%)	13(22%)	100%
Lack of funds for routine maintenance	50(83.3%)	7(11.7%)	3(5%)	100%
Computer phobia	40(66.7%)	20(33.3%)	-	100%
Fire outbreak	10(16.7%)	40(66.7%)	10(16.7%)	100%

Table 3 above shows the responses of library staff on responses of library staff on the deterioration of materials experienced in academic library in Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai respectively. From the table, the responses from the respondents are lack of interest on digital information resources 58 (96.7%), temperature 50(83.3%), inadequate computer systems 53(98.3%), lack of computer experts to handle maintenance 53(98.3%), computer system crash 47(88%), lack of funds for routine maintenance 57(95%), computer phobia 60(100%), and fire outbreak 50(83.3%).

All the responses from the respondents that is 80% and above agreed that the library experienced the

above mentioned causes or factors that lead to destruction of digital materials in academic library in Federal University of Technology Minna and Ibrahim Badamasi Babangida University.

These findings corroborate that of Obiroa and Okeke (2013) who studied the Challenges of Electronic Information Management in Nigerian University Libraries and found out that the methods of coping with the frequent changes in electronic information, the two system administrators unanimously suggested that librarians should be involved in continued training, workshops, research and internet update. They suggested that the library authorities should create conducive environment for librarians and users to excel in technology enhanced library operations

**Table 4:** Score responses of library staff on strategies for effective preservation and conservation of digital information resources in University library (N=60)

Strategies	Strongly agreed	Agreed	Strongly disagreed	Disagreed	Percentage (%)
Provision of adequate budget to purchase enough computers	20(33.3%)	30(50%)	7(11.7%)	3(5%)	100%
Frequent training should be given to librarians on how to handle digital information	25(41.7%)	34(56.7%)	1(1.6%)		100%
Library should maintain regular power supply	21(35%)	37(61.7%)	2(3.3%)		100%
Regular maintenance of computer to avoid system breakdown	15(25%)	40(66.7%)	3(5%)	2(3.3%)	100%
Provision of enough air conditioners to make the place conducive and avoid over heating	34(56.7%)	15(25%)	9(15%)	2(3.3%)	100%
Fire distinguishers	30(50%)	20(33.3%)	7(11.6%)	3(5%)	100%
Smokes detectors	39(65%)	15(25%)	5(8.3%)	1(1.7%)	100%

Table 4 above clearly showed the responses of library staff on the strategies to enhance preservation and conservation of digital information resources in university libraries in Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai. From the table, responses from the respondents are provision of adequate budget to purchase enough computers 50 (83.3%), Frequent training should be given to librarians on how to handle digital information 59(98.4%), Library should maintain regular power supply 58(98.4%), Library should maintain regular maintenance to avoid system breakdown 57(97.3%), provision of enough air conditioners to make the place conducive and avoid over heating 49(86.7%), Fire distinguishers 50(83.3%) and smokes detectors 54(80%). From their responses, almost all the respondents agreed that the above mentioned strategies in table 4 will enhance preservation and conservation of library materials

because all the responses have high scores which is 80% and above.

### CONCLUSION

From the findings of the study on the preservation and conservation of digital information resources in Federal University of Technology, Minna and Ibrahim Badamasi Babangida University, Lapai libraries, there are lots of reasons why Universities preserve and conserve digital information resources among which digital materials guarantee to the safe keeping and continue digital information resources. There are many techniques used in preserving and conserving digital information resources in order to continue to be used in Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai libraries such as provision of electricity, air conditions systems, and provision of security.

There are many problems affecting digital information resources such as

lack of maintenance culture, inadequate manpower, lack of electricity, harsh environmental condition. There are many strategies used in conserving and preserving digital information resources such as provision of adequate funds to purchase computers, provision of adequate training, steady electricity supply, and provision of adequate air condition system respectively. Both the Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai have adopted some of these systems, some are adopted very often while some occasionally for preserving and conserving digital information resources.

In line with the above statements from the respondents at both libraries of the Federal University of Technology Minna and Ibrahim Badamasi Babangida University Lapai respectively, the study suggested the provision of enough trained staff on digital information resources, adequate funding, and modern day's technological equipment such as computers and the internet services should be made available in order to enhance preservation and conservation of digital information resources.

## RECOMMENDATIONS

Based on the findings of this research work, the following recommendations are proffered:

1. There are many reasons for the preservation and conservation of digital information resources in Federal University of Technology, Minna and Ibrahim Badamasi Babangida University, Lapai which is to ensure the availability and use of digital information resources. The library management therefore should ensure that this digital resources are adequately conserved and preserved.
2. The techniques used in preserving and conserving digital information resources should be maintained and improved upon for effective preservation and conservation of digital information resources.
3. There are many problems militating against the continued use of digital information resources in these Universities. These problems should be taken care of by the management in order to have effective digital information resources and services continuously.
4. The strategies used in preserving and conserving digital information resources should be maintained and improved for effective digital library services in Universities.

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