

## **Preservation, Conservation and Safety of Library Materials: An Appraisal on Some Selected Special Libraries in Kaduna Metropolis**

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### **Abstract**

*Preservation and conservation of library materials has become a global phenomenon to which libraries must strongly respond to in order to meet the information needs of their clientele. This study was conducted to assess the preservation, conservation and safety of library materials in some selected special libraries in Kaduna metropolis. To achieve the objectives of the study, five research questions were constructed. The study adopted Survey research method. The population of the study was the professional librarians from the selected special libraries. Structured questionnaire was used as instrument for data collection. Data obtained were analyzed using descriptive tables. The result of the study revealed that the major causes of deterioration in the libraries studied were environmental factors and human activities among others. The study equally revealed that the major techniques used were lamination, binding, provision of adequate security systems to prevent theft and use of insecticide etc. The study showed that preservation policies exist in the libraries. The study identified the major constraints to effective preservation of materials as inadequate funding, inadequate infrastructure, inadequate power supply etc. In line with findings, recommendations were made. The study concludes that the special libraries in Kaduna metropolis are yet to fully embrace technological innovations for the preservation, conservation and security of library materials.*

**Keywords:** *Conservation, Preservation, Library materials, Special Library, Security.*

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## **Introduction**

Libraries and information centres acquire library materials in either print or electronic format to meet the information needs of their users. As a result of the activities of human, physical, biological and other factors on information materials, these materials get deteriorated with time. For effective exploitation or utilization of these resources by the users, the resources must be in good physical condition. The deterioration of information resources has been a basic problem since the inception of libraries and it has assumed alarming proportions. Hence, the need for preservation, conservation and security of the information resources in the libraries, information centres, museums, records centres and archives becomes imperative.

Preservation is a way through which library and information resources are protected from being damaged or deteriorated by human being, insects, wind, rainfall, fire, flood etc. Preservation is the process of making library collections to continue to have authenticity and integrity (National Archives of St. Kitts, 2014). According to Ogunniyi and Adejube (2014) preservation is the act of controlling risk to the intellectual and physical heritage of a community. Preservation involves all the activities that serve to prolong the life of materials in a library's collections and to ensure their continuous usage by both the present and future generation (Osayuwa and Eneh, 2011).

Conservation is the measure taken to put back the deteriorated information resources into their original forms. It is carried out in order to help in the prolongation of information resources. According to American Library Association (2014) Conservation is the act of returning the damaged items to their original form, while restoration is the process of maintaining the original feature of information materials through binding, stitching, gumming among others.

Security of the library resources is crucial and very important for the protection of the materials against damage or deterioration. The print and electronic resources are delicate; the way they are handled can affect the life span of the records contained in them. Wayne and Timothy (2011) opined that security is protecting collection from unauthorised use, displacement, defacement, modification and destruction. Records must be preserved and conserved for future use.

Special library is a library maintained by corporation, association, government agency or any other group. It can also be defined as a specialized or departmental collection within a library for the organisation and dissemination of information and primarily offering services to a specialized clientele through the use of varied media and methods (Madu and Adeniran, 2005). Typical special library resources/collections include periodicals, book/monographs, reference materials, abstracts/indexes, pamphlets, chippings, patents, reports, maps, trade literature, audio visual, multi-media resources and other ICT components. Any special library that aims to satisfy the information needs of its users must take great care with the development, management and preservation of its collection.

### **Statement of Problem**

Deterioration of information resources is one of the basic problems facing library materials which are prone to wear and tear, shrinkages, brittleness, discoloration, dust and dirt accumulation. The print and electronic materials are vital and delicate. The way they are handle can affect the life span of the records contained in them. Records must be preserved and conserved for future use. Preservation and conservation functions in librarianship are not given the necessary attention required. Preserving and conserving these materials has remained one of the greatest challenges faced by African libraries today (Popoola, 2003). Studies such as Njeze (2012); Ogunmodede & Ebijuwa (2013) have shown that, the outcome of preservation and conservation of information resources could not be described as successful, hence the need to address the observed problems becomes pertinent.

Preliminary investigation by the researcher points to some security lapses in the library under study. For example, the security checkpoints are visibly unsecured

and as such users go in and out of the library without proper checks; some important pages of the books on the shelf are cut off. Also, most of the torn materials are left on the shelf without making any effort to repair them from further deterioration so as to elongate their life span due to insufficient fund to carry out repairs on them. Therefore, the purpose of this study was to assess the preservation, conservation and safety of library materials in the selected special libraries in Kaduna metropolis.

### **Objective of the Study**

Specifically, the objectives of the study are to:

- a. To investigate the nature and causes of deterioration of library materials in the selected special libraries
- b. Examine the pattern for the preservation and conservation of print and non print library materials in the selected special libraries
- c. To find out the type of ICT used in the preservation and conservation activities of the selected special libraries
- d. To find out the existence of preservation, conservation and safety policies in the special libraries.
- e. To identify the constraints to effective preservation, conservation and safety of information materials in the selected special libraries

### **Research Questions**

The following research questions are formulated to guide the study.

- a. What are the nature and causes of deterioration of library materials in the selected special libraries?
- b. What are the techniques used in the preservation and conservation of print and non-print library materials in the selected special libraries?
- c. What types of Information and Communication Technology (ICT) are used in the preservation and conservation activities of the selected special libraries?
- d. Do preservation, conservation and safety policies exist in the selected special libraries in Kaduna metropolis?

- e. What are the constraints to effective preservation and conservation of information materials in the selected special libraries?

## **Literature Review**

### **The Nature and Causes of Deterioration of Library Materials**

One of the major challenges libraries all over the world are facing is the rate of deterioration of their collections. Researchers have predicted that all paper based records of this century as well as those of earlier years face imminent ruin. According to Gabasa (2015) deterioration is a change of quality of a material from its original state to a damaged state.

Some of the conditions that make library resources to decay are human, environmental, biological and chemical factors. Sawant (2014) opined that biological agents, environmental factors and human activities are responsible for deterioration of print materials in library. Ogunniyi and Adejube (2014) discovered in their study that the most prominent incidences of deterioration were broken spine of projects, vandalism and mutilation of the projects. Also, Adamu, Babalola and Kasim (2018) reported in their study that mutilation of materials by library users are: environmental factors such as temperature and humidity; biological factors such as insects, molds, rodents, bacteria and fungi; rough handling by library staff; improper organization; chemical factors such as acidity of paper and natural disasters such as flood and fire. The study conducted by Adekannbi and Wahab (2015) on comparative analysis of the preservation and conservation techniques of selected special and academic libraries in Nigeria revealed that dust, wear and tear, excessive photocopying, pests and excessive light, frequent use of material, magnetism and biological agents are the causes of deterioration of library materials in the special and academic libraries studied.

### **Technique for the Preservation and Conservation of Print and Non-print Library Materials**

Preservation techniques are some of the measures adopted by libraries to protect or prevent the entire library materials or collections from being harmed, damaged or deteriorated. According to Maidabino (2010) techniques of

preservation and security of library information resources are age long strategies that can be traced as far back as 539BC in Egypt when the library books were chain-locked to prevent them from theft. Gbaje (2011) stated that techniques used to preserve the information resources have been changing periodically due to the change in technologies and libraries that preserve the resources have also been continuously upgrading their systems to meet the changes. Adekannbi and Wahab (2015) opined that the techniques used in preserving print resources such as textbooks, serial publication, government documents and reference materials in libraries includes: cleaning and dusting, photocopying, re-binding, lamination, fumigation, shelving to allow free air flow and air conditioning while technique used for preserving non-print materials like electronic and audio-visual resources include: digitization, use of hard disc, flash drive, microfilming and adequate security systems to prevent vandalism and mutilation etc.

Olatokun (2008) studied survey of the various techniques used in the preservation and conservation of library materials in selected academic libraries in Nigeria. The study revealed that cleaning and dusting of library materials was the commonly used technique and some of the libraries adopt and use digital preservative techniques, but they are still not effectively used. Adamu, Babalola and Kasim (2018) affirmed in their study that majority of the respondents agreed that cleaning and dusting of information resources, photocopying of printed documents, re-binding of books and periodicals, air conditioning, microfilming of periodicals, digitization of publications of staff, storage of e-materials such as CDs, DVDs in containers or cabinets and use of hard disc or flash disc to store e-books and e-journals, fumigation of the library building, lamination of charts and related documents are the techniques used in preservation and security of library materials. Also Adeniyi, et al (2014) Finding revealed that adequate security, cleaning and dusting were the techniques used in preserving and conserving print materials

### **Use of ICT in the Preservation and Conservation of Library Material**

The advent of Information Communication Technology (ICT) now made libraries to preserve their information resources through electronic method. Information on printed format can now be recorded in computer using compact

disk (CD), diskette, flash drives and through digitization of library information resources (Igbeka, 2008; Aina, 2013). ICT is technology that supports activities involving the creation, storage, manipulation and communication of information, together with the related methods, management and preservation. Ifijeh (2014) averred that maximizing the use of ICT remains the only alternative in handling the limitations identified in the current preservation methods adopted by libraries. ICT has enabled the digitization of resources in libraries, it has introduced new options for preservation, conversion, scanning and uploading with the help of specific software. Saminu (2016) asserted that libraries are witnessing a rapid and progressive transformation as a result of ICT revolution. He further stressed that one of such transformation has manifested in the form of digital libraries. The evolution 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. One of such services is digital preservation, which is the work needed to ensure that digital content is maintained and accessible. Digital preservation is the maintenance of objects close to their original conditions as far as possible until they are no longer needed (Gbaje, 2011).

### **Preservation, Conservation and Safety Policies in Libraries.**

The formulation of a preservation and security policy for special libraries is a necessary step in fulfilling the role of libraries and gives the direction which are necessary for the protection of its resources. A policy is a set of principles and strategies which guide a course of action for the achievement of a given goal. Ogbemor (2010) in his paper reported that most African countries have got no policies on preservation of information in both paper and e-form. Similarly, Ovowoh and Iwhiwhu (2010) in their study on the preservation and conservation of library materials in higher institution libraries in Nigeria discovered that there was no written policy in the institutions studied, and decisions on preservation and conservation were arbitrary and inconsistent. Further, the findings revealed that all respondents confirmed that there was need to have such a policy and that the policy should spell out the percentage of the budget to be used for preservation and conservation programme.

Preservation policies gives libraries the right approaches needed to initiate ways which are vital for the protection of library resources. According to Forde (2008) a preservation policy should remind both staff and patron of their obligations, sets them out in a relationship that makes it clear that securing the survival of the materials requires joint action and ensures that staffs at the highest and lowest levels are made aware of the importance attached to preservation issues. Also, Beagrie, et al (2008) asserted that a preservation policy should include, a set of standards for storage, cleaning and handling of materials, a programme of education for staff and users, a contingency plan for disaster recovery, a maintenance programme to clean and repair damaged items, a priority for conservation treatment of all types of materials and the use of surrogates to replace originals.

#### **Constraints to Effective Preservation, Conservation and Safety of Library Materials.**

Preservation, conservation and security involves the activities that help to prolong the life span of library collections and ensure their continuous use by the present and future generations. However, there are challenges to its effectiveness. Noticeable constraints to effective and efficient preservation of information materials are lack of maintenance culture, inadequate finance, administrative challenges, poor quality of paper and ink, lack of preservation and conservation Policy, unfavourable government economic policies (Popoola, 2003; Olatokun, 2008 and Njeze, 2012).

Shameenda (2011) examined preservation and conservation of library materials, techniques and practices in the University of Zambia Library and its two branches. The findings identified managerial and financial considerations, storage and accommodation, staffing levels, policies, techniques and practices, lack of awareness concerning preventive measures, poor handling and use of library materials as constraints to effective preservation and conservation of library materials. Also, Ogbodo (2011) in his study on the preservation of information sources in polytechnic libraries in South Eastern States of Nigeria, found that inadequate funding, harsh environmental condition, lack of good preservation policy and lack of competent manpower as constraints to use of preservation and conservation techniques. Olatokun (2008) study revealed that



inadequate funding was the most severe inhibitor to effective preservation and conservation activities in the university libraries studied.

### Research Methodology

Descriptive survey method of research was adopted for this study. Purposive sampling was used for the study to select three (3) special libraries in the study with some level of preservation and conservation activities. The population of the study was limited to the professional staff of Nigerian Institute of Trypanosomiasis Research (NITR), Sunami Road, National Water Resources Institute (NWRI), Mando and Federal College of Forestry Research and Mechanization (FCFRM), Afaka, Mando as they are considered to be in the best position to give all the information required for the study. The instrument used for data collection was structured questionnaire. Data gathered were analyzed using descriptive table.

**The breakdown of the library staff in each institution and the sum total of the population of study is contained in the table below**

**Table 1: List of Selected Special Libraries**

Name of Institution	Number of Professional Staff
NITR	9
NWRI	2
FCFRM	1
Total	12

Table 1 indicated the total number of professional staff in each of the selected special libraries in Kaduna metropolis.

### RESULTS

#### **Research Question One: Nature and causes of deterioration of library materials in the selected special libraries**

In order to determine the nature and causes of deterioration of library materials in the selected special libraries, the respondents were asked to choose from the options provided. The result of the analysis is presented in Table 2 below:

**Table 2: Nature and causes of deterioration of library materials**

S/N	Nature and causes of deterioration of library materials	NITR	FCFRM	NWRI
1	Mutilation of library materials	.	.	√
2	Vandalization of library materials	×	√	×
3	Brittle library materials	×	√	×
4	Broken spine of books	√	√	√
5	Books becoming torn	√	×	×
6	Changing of colour of image in photographic materials	√	√	√
7	Loss of data on magnetic media	√	√	√
8	Wear and tear due to excessive photocopying	√	√	√
9	High acidity level	√	×	×
10	Relative humidity	×	×	×
11	Dust and particulate matters	√	√	√
12	Bad shelving	√	√	√
13	Biological agents (e.g termites, cockroaches, spiders, rodents etc)	×	√	√

√- Applicable      ×- Not applicable

The findings from the Table 2 indicates that the major causes of deterioration in the libraries studied were broken spine of library materials, books becoming torn, changing of colour of image in photographic materials, wear and tear due to excessive photocopying, dust and particulate matters and bad shelving, followed by mutilation and biological agents. This result implies that as long as we have libraries all these agents of deterioration would live along side with the libraries.

### Research Question Two: Techniques used in preservation, conservation and safety activities in the Special Libraries

Also, Table 3 presents the result of the analysis of the various techniques used in preservation, conservation and safety activities in the selected special libraries.

**Table 3: Techniques used in preservation, conservation and safety activities in the Special Libraries**

S/N	Preservation, conservation and security techniques	NITR	FCFM	NWRI
1	Lamination	√	√	√
2	Microfilming	×	×	×
3	Deacidification	×	×	×
4	Binding	√	√	√
5	Encapsulation	×	×	×
6	Cleaning and dusting of library materials	√	√	√
7	Photocopying	√	√	√
8	Shelving library materials to allow for free flow of air	√	√	√
9	Provision of adequate security systems to prevent theft, mutilation, and defacing of paper-based material	√	√	√
10	Use of insecticide and insect repellent for library materials preservation	√	√	√
11	Installing air-condition	√	×	√

√- Applicable      ×- Not applicable

It is evident from table 3 that lamination, binding, cleaning and dusting of library materials, photocopying, shelving materials to allow for free air, provision of adequate security systems to prevent theft and use of insecticide were the most used preservation and conservation techniques for the library materials, followed by installation of air condition. Also, it could be seen that microfilming, de-acidification and encapsulation were not used by the libraries.

### Research Question Three: What type of ICT are used for preservation and conservation activities in the special libraries

In order to ascertain the type of ICT used in preservation and conservation of library materials, various types of ICT strategies were listed for the respondents to choose the ones they use in their libraries. The result of the analysis is presented in Table 4 below:

**Table 4: ICT utilization in preservation and conservation activities in the Special Libraries**

S/N	ICT use in preservation and conservation activities	NITR	FCFRM	NWRI
1	Technology preservation (replicating any old configuration of hardware and software)	√	×	×
2	Refreshing (periodic copying from one physical medium to another)	√	×	√
3	Migration (transfer of digital materials from one generation of computer technology to subsequent generation)	√	×	√
4	Emulation	×	×	×
5	Encapsulating	√	×	×
6	Microfilming	√	×	×
7	Use of standard	√	×	√

√- Applicable      ×- Not applicable

The findings from Table 4 revealed that NITR used all the ICT preservation strategies except emulation. On the other hand, NWRI used refreshing, migration and use of standards, while FCFRM does not use any of the ICT strategies for their preservation and conservation activities. This implies that the special libraries in Kaduna metropolis are yet to fully embrace technological innovations for the preservation, conservation and safety of library materials.

### Research Question four: Do preservation, conservation and safety policies exist in the selected special libraries

The researchers attempt to find out if preservation, conservation and safety policies exist in the selected special libraries. Table 5 below presents the result of the analysis of the respondents.

**Table 5: Preservation, conservation and safety policies that exist in the selected special libraries**

S/N	Preservation, conservation and safety policies	NITR	FCFRM	NWRI
1	safety of library materials	√	√	√
2	Disaster recovery procedure	√	×	×
3	Use of library materials	√	√	√
4	Handling of library materials	√	√	√
5	Training of staff on preservation of library materials	√	√	√
6	Restoration of deteriorated library materials	√	√	√
7	Loan policy	√	√	√

√- Available    ×- Not available

The findings arisen from Table 5 shows that safety of library materials, use of library materials, handling of library materials and restoration of deteriorated library material policies exist in all the libraries studied, except disaster recovery procedure which exist only at NITR library.

#### **Research Question five: Constraints to the effective preservation, conservation and safety of library materials in the Special Libraries**

In order to identify the constraints to effective preservation, conservation and safety activities in the selected special libraries, the researcher provided the respondents with 7 options to choose from. The results of the analysis are presented in Table 6.

**Table 6: Constraints to the effective preservation, conservation and safety of library materials**

S/N	Constraints to the effective preservation and conservation of library materials	NITR	FCFRM	NWRI
1	Lack of competent manpower in preservation and conservation	×	×	×
2	Lack of preservation and conservation policy	×	×	×
3	Inadequate infrastructure	√	√	√
4	Poor funding of the library	√	√	√
5	Administrative bottleneck	√	×	×
6	Harsh environmental conditions accelerating library materials depreciation	√	×	×
7	Inadequate power supply	√	√	√
8	Outdated or non -existed hardware, software and network connectivity	√	√	√

√- YES    ×- NO

Table 6 shows the responses of respondents on the constraints to effective preservation and conservation of library materials. The findings shows that a good number of respondents agreed that inadequate funding, inadequate infrastructure, inadequate power supply and outdated or non-existence

hardware, software and network connectivity were major constraints to effective preservation and conservation activities in the libraries studied. Also, a harsh environmental condition was indicated as a constraint.

### **Discussion of Findings**

The findings from the study revealed that broken spine of library materials, books becoming torn, changing of colour of image in photographic materials, wear and tear due to excessive photocopying, dust and particulate matters and bad shelving were the major causes of deterioration in the libraries studied, followed by mutilation and biological agents. The findings are in line with Adekannbi and Wahab (2015) assertion that dust, wear and tear, excessive photocopying, pests and excessive light, frequent use of materials, magnetism and biological agents are the causes of deterioration of library materials in the special and academic libraries studied. The least causes of deterioration were relative humidity, high temperature level and high acidity level. The result implies that as long as we have libraries all these agents of deterioration would live along side with these libraries.

The study also revealed that the most commonly used technique in the selected special libraries were lamination, binding, cleaning and dusting of library materials, photocopying, shelving materials to allow for free circulation of air, provision of adequate security systems to prevent theft and use of insecticide, followed by installation of air condition, while microfilming, de-acidification and encapsulation were not used at all by the libraries. The findings are similar to that of Adamu, Babalola and Kasim (2018) assertion that cleaning and dusting of information resources, photocopying of printed documents, re-binding of books and periodicals, air conditioning of all spaces, microfilming of periodicals are the techniques used in the libraries studied.

On the use of ICT for preservation activities, the findings revealed that only one library (NITR) used all the ICT preservation strategies except emulation. On the other hand, NWRI used refreshing, migration and use of standards, while FCFRM does not use any of the ICT strategies for their preservation and conservation activities. This implies that the special libraries in Kaduna metropolis are yet to fully embrace technological innovations for the preservation, conservation and safety of library materials.

The findings equally revealed that security of library materials, use of library materials, handling of library materials and restoration of deteriorated library material policies exist in all the libraries studied, except disaster recovery procedure which exist only at NITR library. The findings are in support of Beagrie, et al (2008) who stated in their study that a preservation policy should include, a set of standards for storage, cleaning and handling of material, a programme of education for staff and users, a contingency plan for disaster recovery, a maintenance programme to clean and repair damage items, priorities for conservation treatment of all types and the use of surrogates to replace originals.

In addition, the findings identified the major constraints to effective preservation, conservation and safety of library materials as inadequate funding, inadequate infrastructure, inadequate power supply and outdated or non-existence hardware, software and network connectivity in the libraries studied, followed by harsh environmental condition and administrative bottleneck, while lack of policy and lack of adequate and competent manpower were not identified as a barrier. The findings is in agreement with Ogbodo (2011) study on the preservation of information sources in polytechnic libraries in South Eastern States of Nigeria that inadequate funding, harsh environmental condition, lack of good preservation policy and lack of competent manpower as constraints to use of preservation and conservation techniques. This implies that the factors listed hinder the effective preservation, conservation and security of library materials. Therefore, for effective preservation and conservation activities in the special libraries, all these factors must be tackled.

### **Conclusion**

Based on the findings of this study, the researcher concluded that the special libraries in Kaduna metropolis are yet to fully embrace technological innovations for the preservation, conservation and security of library materials. Broken spine of library materials among others were identified as the major causes of deterioration in the libraries studied. The study equally revealed that all the techniques were used by the selected special libraries except microfilming, de-acidification and encapsulation. Furthermore, the study indicates that preservation policies exist in the libraries. However, several

factors such as inadequate funding, inadequate infrastructure, inadequate power supply and outdated or non-existence hardware, software were identified as major constraints to effective preservation and conservation activities in the libraries.

### **Recommendations**

Based on the findings and conclusion reached, the following recommendations are made for improvement:

1. Preservation and security is the means by which library materials are protected for the use of present and future generations. To minimize the risk of loss of library collections and slowing down as much as possible, the process of physical deterioration which affects most library information resources, staff surveillance to check the movement of the library resources or the use of electronic security system is essential.
2. Management of these special libraries should provide standby generators for their libraries to serve as alternative to power source as such would support the efforts at preserving library materials
3. Management of these special libraries should carry out preservation exercise from time to time such as fumigation of the entire library building and employ the services of preservation professionals to train their staff on preservation activities.
4. Management of the special libraries should adopt the use of ICT in the preservation, conservation and security of library materials.

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