

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

---

2015

# Comparative Analysis of the Preservation and Conservation Techniques of Selected Special and Academic Libraries in Nigeria

Janet O. Adekannbi

*Africa Regional Centre for Information Science, University of Ibadan, Nigeria, janet.adekannbi@gmail.com*

Femi-Wale Wasiu Wahab

*Africa Regional Centre for Information Science, University of Ibadan, wahab\_femiwale@yahoo.com*

Follow this and additional works at: <http://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#)

---

Adekannbi, Janet O. and Wahab, Femi-Wale Wasiu, "Comparative Analysis of the Preservation and Conservation Techniques of Selected Special and Academic Libraries in Nigeria" (2015). *Library Philosophy and Practice (e-journal)*. 1328.  
<http://digitalcommons.unl.edu/libphilprac/1328>

# Comparative Analysis of the Preservation and Conservation Techniques of Selected Special and Academic Libraries in Nigeria

## **Background to the study**

A library as a social institution is charged with the responsibility of disseminating knowledge to the people without any discrimination. The holdings of the libraries are the priceless heritage of mankind as they preserve facts, ideas, thoughts, accomplishments and evidences of human development in multifarious areas, ages and directions (Olatokun, 2008). According to Aina (2004), the library contains information required by different users and this information appears in a variety of formats such as books, serials, maps, compact discs etc. These formats are collectively called information carriers and can be classified into two types namely: print and non-print library materials.

An academic library as stated by Aina (2004) has a main purpose of supporting the objectives of an academic environment in the areas of learning, teaching, research and service. Academic libraries are libraries established in tertiary institutions. They include libraries in universities, colleges of education, and polytechnics (Emojorho and Nwalo, 2009). Yusuf and Iwu (2010) described the academic library as an indispensable instrument for intellectual development. A well-stocked academic library is a storehouse of information, or a record of human experience to which users may turn for data or information.

The term “special libraries” was only coined in 1908 when it was decided at a meeting of librarians to call the emerging libraries in America “special libraries”. Despite the fact that these libraries have been around for many centuries, the concept has not yet been clearly defined and many opinions as to what exactly special libraries entail still prevail (Singh 2006).

Special libraries are established to meet the specialized needs of professional and business groups. It may be the library of a corporation, government departments, or a research institute. It can be further explained as a library which is concerned exclusively with the literature of a particular subject or related groups of subjects. They are established to serve a particular group of readers and they have restricted users. Special libraries can serve particular population, such as the blind and physically handicapped, while others are dedicated to special collections, such as the Library of Congress (Aina, 2004).

Poll (2007) on the other hand points out that in most cases, definitions indicate what special libraries are not, rather than what they are. For example it is not a public, national, academic or school library. Adding to the confusion is the fact that these libraries cannot be typified by a single typology or specific set of characteristics because many types are included, such as news libraries, law libraries, libraries for the blind and deaf, museums, archives, corporate libraries and non-profit organization libraries. These libraries are also not identified by a common name, for they are also known as information centers, information analysis centers, documentation centers, information resource centers or knowledge management centers. Ownership of the libraries also varies and includes role players such as governments and their departments, non-governmental agencies, commercial firms and news agencies.

Poll (2007) further stated that the most significant characteristic which distinguishes the special library from other types of libraries, however, is that it is established to obtain and exploit specialized information for the private advantage of the organization which provides its financial support whether the parent organization is a government agency, business or

industrial company or group of companies, a nonprofit organization, private society or institution, a research association, or a hospital.

However, irrespective of the type of library, library materials are vital sources of information and as such they are made to be used, read and studied. This requires that library materials be accessible to users, thus subjecting them to handling. Any form of use will accelerate the deterioration of the item and, ultimately, its destruction if intervention does not occur (Rosenberg 1995, cited in Shameenda 2011). According of the National Library of Australia (2004), one of the major crises facing libraries throughout the world is the rate of deterioration of their collections. Since library materials are composed primarily of organic materials, they are subject to natural deterioration. Most libraries' collections today are based on paper either in book or sheet form, bound volumes, newspapers, serials, manuscripts, maps, water colors, prints and drawings. The collections of modern materials such as sound tapes and electronically stored information such as CD ROMs and computer discs are growing rapidly and almost all of most libraries' collections are essentially impermanent. Conservation and preservation of deteriorating information resources in libraries has thus become a global phenomenon to which libraries must aggressively respond if their mission of providing information needs of their patrons would be met (Akande, 2009).

According to Srivastava and Kumar (1986, cited in Sawant 2014), conservation and preservation are two words that have different implications though they are related to each other. Preservation by definition are activities associated with maintaining library and archival materials for use either in their original physical form or in some other usable way, while conservation is one aspect of preservation activity as it implies the active use of preventive measures or processes to repair damaged materials and ensure continued existence of materials.

Conservation and Preservation are the processes of keeping an object safe from harm or loss, damage, destruction and maintaining it in a reasonably sound condition for present and future use, preservation deals with the regular maintenance aspect whereas conservation deals with the curative treatment (Sawant, 2014).

The term 'Conservation' has been defined in the International Records Management Trust (1999) as the intrusive protection of archival material, by the minimal physical and chemical treatments necessary to resist further deterioration, which will not adversely affect the integrity of the original. It was further explained that it is specific work to protect materials and improve the environment in which they are kept. Conservation is preservation at the item level. It embraces those activities that improve the condition of the physical object or protect it from damage (Jordan, 2003).

Conservation was also defined in IFLA Principles for the Care and Handling of Library materials (2010) as specific practices taken to slow down deterioration and prolong the life span of an object by direct intervening in its physical or chemical make-up. The composition of some of the media of storing information makes deterioration inevitable. Deterioration may set in through the natural ageing process or as a result of other factors such as chemical composition of the media of information, biological agents, environmental factors, physical agents and improper handling. There is, therefore, the need to take certain conservation measures to slow down deterioration to avoid losing these library resources. Conservation involves taking protective measures to prevent decay and consequently, the loss of library resources.

The IFLA Principles for the Care and Handling of Library materials (2010) also defined preservation to include all the managerial and financial considerations including storage and

accommodation provisions, staffing levels, policies, techniques, and methods involved in preserving library and archival material and the information contained in them. While conservation is direct physical intervention arresting or slowing down deterioration of library materials, preservation involves both the direct and indirect action. In preservation, consideration is given to every element that promotes the protection of the materials including the housing, storage system and security against such threats as theft, mutilation and poor handling. Preservation is therefore, a more embracing concept and it include conservation.

Olatokun (2008) carried out a survey of the various techniques used in the preservation and conservation of library materials in selected university libraries in Nigeria. Findings revealed that preservation and conservation techniques, though adopted in the university libraries, were not effectively in use although the libraries all had preservation polices. The study also revealed that cleaning and dusting of library materials was the most commonly used technique. The study established that there are indeed incidences of deterioration, the most prominent being books becoming torn and cracking and scratching of digital materials. Further results showed that though some of the libraries adopt and use some digital preservation techniques, they are still not effectively used. Other findings revealed that inadequate funding was the most severe inhibitor to effective preservation and conservation activities in the university libraries.

Ovowoh and Iwhiwhu (2010) also investigated the preservation and conservation of library materials in higher institution libraries in Nigeria. The study revealed 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. The findings also showed that there were no personnel trained in preservation and conservation of library materials, but all the libraries accepted that non-professionals had received some training in general librarianship.

Ogbodo (2011) examined the preservation of information sources in polytechnic libraries in South Eastern States of Nigeria. The study found out that the problem of preservation of information sources in the polytechnic libraries are dust and disintegration of books and that the library did not adopt the use of modern technology. The results showed among others that there were problems of preservation of information sources in polytechnic libraries in Nigeria. It was reported that the polytechnic libraries adopted repairs, the use of firefighting equipment, binding, fumigation, air conditioning, proper storage, photocopying/duplication, use of insecticides and the storage of book away from light to preserve their information source. The findings revealed inadequate funding, harsh environmental condition, lack of good preservation policy and lack of competent manpower as constraints to use of preservation and conservation techniques.

Shameenda (2011) investigated preservation and conservation of library materials, techniques and practices in the University of Zambia Library and its two branches. The study highlighted preservation and conservation issues which included managerial and financial considerations including storage and accommodation, staffing levels, policies, techniques and practices in preserving and conserving library materials and the information contained in them in order to ensure long term access to them. The research findings revealed that although the University of Zambia libraries were involved in the long-term preservation of library materials, they did not provide a well-planned preservation and conservation care because preservation

was given least priority and conservation programmes were addressed in varying degrees in the libraries. The study further identified lack of preservation and conservation planning, policies and weak commitment from the University of Zambia management on funding of libraries at the University of Zambia. Also inadequate programmes and limited preservation and conservation education and training among librarians were the other forms of obstacles to effective preservation and conservation of library materials in the university libraries. Also revealed was the lack of awareness concerning preventive preservation measures, poor handling and use of library materials. Njeze (2012) carried out a research on Preservation and Conservation Issues in Selected Private Universities in South-West Nigeria. It was discovered that the challenges facing all Universities studied were lack of comprehensive preservation policy, trained manpower and funding, which also affects the infrastructural development of the libraries and their preservation policy. Ogunniyi and Adejube (2014) investigated the strategies of curbing deterioration of library materials in selected Colleges of Education libraries in Southern Nigeria. It was discovered that the most prominent incidences of deterioration were broken spine of projects, vandalism and mutilation of the projects. Furthermore, results showed that none of the libraries has digitized the undergraduate projects.

Clearly, in spite of the awareness and technological advancement in the field of preservation and conservation there seems to be more books deteriorating (Olatokun 2008; Ovowoh and Iwhiwhu 2010; Shameenda 2011). Moreover, much focus has been placed on academic libraries with only very little emphasis on special libraries. This research has therefore tried to fill the gap on the techniques used to conserve and preserve in special libraries, while also comparing it with those of the academic libraries. Hence, the following research questions are answered in this study:



1. What are the types and frequencies of deterioration of library materials in the selected special and academic libraries?
2. What are the causes and level of deterioration of library materials in the selected special and academic libraries?
3. What preservation and conservation techniques of library materials are used in the selected special and academic libraries?
4. To what extent is information and communication technology (ICT) utilized in the preservation and conservation activities of the selected university libraries?
5. Are there written or un-written policies guiding the conservation and preservation of the library materials in the selected special and academic libraries?
6. What are the challenges to effective preservation and conservation of library materials in the libraries under study?

The study also tested the following hypotheses:

**Hypothesis 1**

There is no significant difference in the cause and level of deterioration experienced in special and academic libraries.

**Hypothesis 2**

There is no significant difference in the types of deterioration experienced in special and academic libraries.

**Hypothesis 3**

There is no significant difference in the techniques of conserving and preserving library materials in special and academic libraries.

The remainder of this paper explains the research methodology followed by the findings and discussion. The conclusions from the study and recommendations conclude the paper.

### **Research Methodology**

This study used the descriptive research design using both quantitative and qualitative approaches. The study location was Lagos and Oyo states of Nigeria. These locations were selected due to the proliferation of institutions with academic and special libraries. Purposive sampling was adopted in selecting the academic and special libraries that participated in the study. The libraries were selected based on the following: pre-study visits that revealed that preservation and conservation techniques were not prominent in all the libraries in these two states and the willingness of the librarians to participate in the study. A total of 20 libraries (7 academic libraries and 13 special libraries) with some level of preservation and conservation practices were thus purposively selected as shown in Table 1. The respondents from each of the libraries were the librarians, because they were in the best position to give all the information required in the study. However, some librarians delegated other staff to provide the required information for this study.

**Table 1. List of selected libraries**

<b>SPECIAL LIBRARIES</b>	<b>ACADEMIC LIBRARIES</b>
Centre for Management Development Magodo, Lagos.	Ajayi Crowther University Oyo.
Cocoa Research Institute of Nigeria, Ibadan.	Caleb University Lagos.
Federal Institute of Industrial Research Oshodi, Lagos.	Ladoke Akintola University of Technology Ogbomosho.
Forestry Research Institute of Nigeria Ibadan.	Lead City University Ibadan.
Federal School of Radiography Yaba, Lagos.	National Open University of Nigeria, Lagos.
Institute of Agricultural Research and Training Ibadan.	University of Ibadan.
International Institute for Tropical Agriculture Ibadan.	University of Lagos.
Lagos State High Court of Justice Ikeja.	

National Horticulture Research Institute Ibadan.	
Nigerian Institute for Medical Research Yaba, Lagos.	
Nigerian Institute for Oceanography and Marine Research Lagos.	
Nigerian Institute of Science Laboratory Technology Ibadan.	
Nigerian Institute of Social and Economic Research Ibadan.	

### **Data collection and analysis**

Both qualitative and quantitative data were collected. For qualitative data, interview was used for data collection, while a structured questionnaire was used for collecting quantitative data. The questionnaire was divided into 4 sections as shown in Table 2. Twenty copies of the questionnaire were administered by the researcher and a 100% response rate was achieved.

**Table 2. Organization of the questionnaire**

<b>Section</b>	<b>Content</b>
Section A	Demographic data about the libraries
Section B	Causes of deterioration in both print and non-print materials
Section C	Preservation techniques and practices
Section D	ICT utilization in preservation and conservation

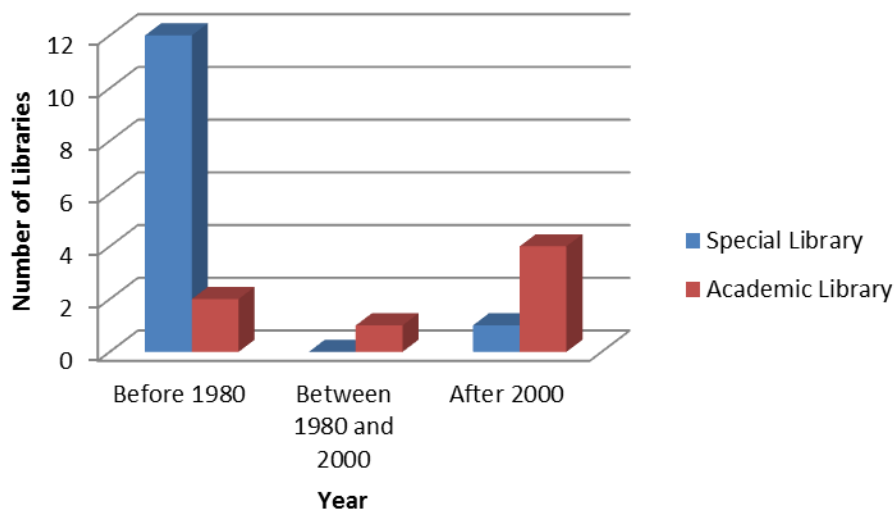
The interview questions were on the availability of preservation and conservation policies in the libraries, the use of ICT for storage of library materials and the constraints towards effective preservation and conservation of library materials. The interview questions were asked immediately after the completion of the questionnaire. All the 20 respondents participated in the interview.

Frequency and percentage distributions as well as Mann-Whitney U test were used to analyse the data collected with the questionnaire. The responses gathered from the interviews and

observations made by the researcher were transcribed, thematically analyzed and presented as quotations.

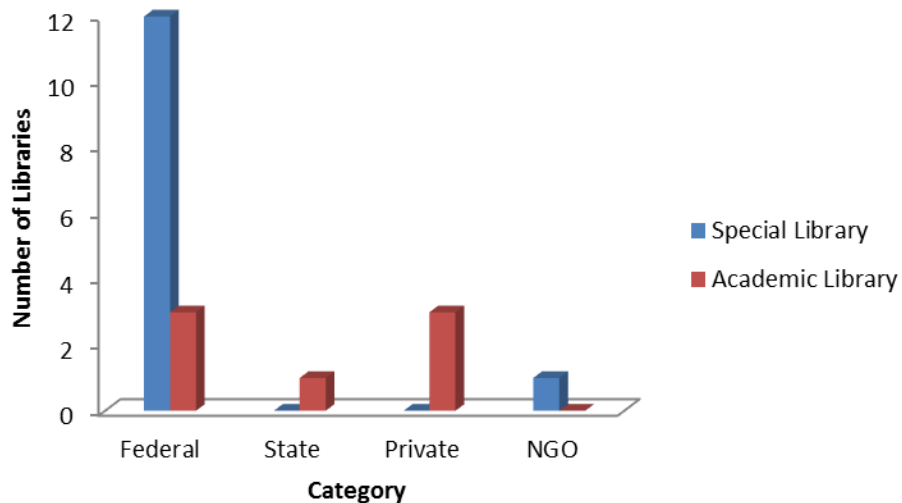
## Results and discussion

Figure 1 shows that majority or 12 (92.3%) of the special libraries were established before 1980, while 1 (7.7%) was established between 1980 and year 2000. None of the special libraries used in this study was established after 2000. Also, 2 (28.6%) of the academic libraries were established before 1980, 1 (14.3) was established between 1980 and 2000, while, 4 (57.1%) were established after 2000.



**Figure 1: Distribution of Libraries by year of establishment**

Figure 2 shows that 12 (92.3%) of the special libraries are owned by the Federal Government while 1 (7.7%) is owned by a non-governmental organization. Three (42.9%) of the academic libraries are owned by the Federal Government, the same proportion (42.9%) is owned by private individuals, while 1(14.3%) is owned by the State Government.



**Figure 2: Distribution of Libraries by category of institution**

### **Types and frequencies of deterioration of library materials**

Tables 2 and 3 show the results for the analysis of the types and frequencies of deterioration of print materials in the libraries. In both special (Mean=2.00 ± 0.58) and academic libraries (Mean=2.14 ± 0.38), broken book spines was the highest type of deterioration. However, destruction by rodents/pests was the least type of deterioration experienced in both special (Mean=1.23 ± 0.6) and academic (Mean=1.29 ± 0.49) libraries. For the non-print materials, loss of data on magnetic media (Mean=2.00 ± 0.82) was the highest degradation experienced by special libraries while changing of colour in photographic materials (Mean=2.00 ± 0.71) was highest for academic libraries. Permanent deformation of sound discs was the least problem facing special (Mean=1.38 ± 0.52) and academic libraries (Mean=1.33 ± 0.52) in both Lagos and Oyo States, Nigeria.

**Table 2: Types and Causes of Deterioration in Library Materials – Special Libraries**

S/N	Type of deterioration (Print)	Often (3)	Sometimes (2)	Rarely (1)	Mean	Std
1	Vandalization of Library Materials	7.7%	15.4%	76.9%	1.31	0.63
2	Mutilation of Pages	15.4%	23.1%	61.5%	1.54	0.78
3	Broken book spines	15.4%	69.2%	15.4%	2.00	0.58
4	Brittle Library Materials	7.7%	53.8%	38.5%	1.69	0.63
5	Destroyed by rodents/pests	7.7%	7.7%	84.6%	1.23	0.60
	<b>Type of deterioration (Non-Print)</b>	<b>Often (3)</b>	<b>Sometimes (2)</b>	<b>Rarely (1)</b>	<b>Mean</b>	<b>Std</b>
1	Changing of colour in photographic materials	12.5%	25.0%	62.5%	1.50	0.76
2	Cracking and scratching of sound and optical discs	12.5%	25.0%	62.5%	1.50	0.76
3	Surface blemishes leading to fading of the image	14.3%	28.6%	57.1%	1.57	0.79
4	Permanent deformation of sound discs	0.0%	37.5%	62.5%	1.38	0.52
5	Poor playback quality of sound discs	12.5%	50.0%	37.5%	1.75	0.71
6	Loss of data on magnetic media	25.0%	50.0%	25.0%	2.00	0.82
7	Distortion of sound quality on magnetic media	0.0%	25.0%	75.0%	1.50	1.00
	<b>Causes of deterioration (Print)</b>	<b>High (3)</b>	<b>Medium (2)</b>	<b>Low (1)</b>	<b>Mean</b>	<b>Std</b>
1	Bad Shelving	7.7%	0.0%	92.3%	1.15	0.56
2	Dust	15.4%	53.8%	30.8%	1.85	0.69
3	Excessive Light	0.0%	7.7%	92.3%	1.08	0.28
4	Moisture	15.4%	23.1%	61.5%	1.54	0.78
5	Pests	0.0%	0.0%	100%	1.00	0.00
6	Wear and Tear due to frequent use or excessive photocopying.	7.7%	61.5%	30.8%	1.77	0.60
	<b>Causes of deterioration (Non-Print)</b>	<b>High (3)</b>	<b>Medium (2)</b>	<b>Low (1)</b>	<b>Mean</b>	<b>Std</b>
1	Atmospheric Pollutants	0.0%	25.0%	75.0%	1.25	0.46
2	Biological Agents	0.0%	22.2%	77.8%	1.22	0.44
3	Dust	11.1%	55.6%	33.3%	1.78	0.67
4	Frequent Use	22.2%	66.7%	11.1%	2.11	0.60
5	Humidity and Heat	11.1%	22.2%	66.7%	1.44	0.73
6	Magnetism	0.0%	16.7%	83.3%	1.17	0.41
7	Oxidation	0.0%	28.6%	71.4%	1.29	0.49

**Table 3: Types and Causes of Deterioration in Library Materials – Academic Libraries**

S/N	Type of deterioration (Print)	Often (3)	Sometimes (2)	Rarely (1)	Mean	Std
1	Vandalization of Library Materials	14.3%	28.6%	57.1%	1.57	0.79
2	Mutilation of Pages	0.0%	42.9%	57.1%	1.43	0.54
3	Broken book spines	14.3%	85.7%	0.0%	2.14	0.38
4	Brittle Library Materials	14.3%	14.3%	71.4%	1.43	0.79
5	Destroyed by rodents/pests	0.0%	28.6%	71.4%	1.29	0.49
	<b>Type of deterioration (Non-Print)</b>	<b>Often (3)</b>	<b>Sometimes (2)</b>	<b>Rarely (1)</b>	<b>Mean</b>	<b>Std</b>
1	Changing of colour in photographic materials	20.0%	60.0%	20.0%	2.00	0.71
2	Cracking and scratching of sound and optical discs	0.0%	85.7%	14.3%	1.86	0.38
3	Surface blemishes leading to fading of the image	0.0%	80.0%	20.0%	1.80	0.45
4	Permanent deformation of sound discs	0.0%	33.3%	66.7%	1.33	0.52
5	Poor playback quality of sound discs	0.0%	66.7%	33.3%	1.67	0.52
6	Loss of data on magnetic media	0.0%	50.0%	50.0%	1.50	0.71
7	Distortion of sound quality on magnetic media	0.0%	50.0%	50.0%	1.50	0.71
	<b>Causes of deterioration (Print)</b>	<b>High (3)</b>	<b>Medium (2)</b>	<b>Low (1)</b>	<b>Mean</b>	<b>Std</b>
1	Bad Shelving	14.3%	0.0%	85.7%	1.29	0.76
2	Dust	14.3%	14.3%	71.4%	1.46	0.79
3	Excessive Light	0.0%	0.0%	100.0%	1.00	0.00
4	Moisture	0.0%	28.6%	71.4%	1.29	0.49
5	Pests	0.0%	14.3%	85.7%	1.14	0.38
6	Wear and Tear due to frequent use or excessive photocopying.	28.6%	57.1%	14.3%	2.14	0.70
	<b>Causes of deterioration (Non-Print)</b>	<b>High (3)</b>	<b>Medium (2)</b>	<b>Low (1)</b>	<b>Mean</b>	<b>Std</b>
1	Atmospheric Pollutants	0.0%	42.9%	57.1%	1.43	0.54
2	Biological Agents	0.0%	14.3%	85.7%	1.14	0.38
3	Dust	14.3%	14.3%	71.4%	1.43	0.79
4	Frequent Use	14.3%	57.1%	28.6%	1.86	0.70
5	Humidity and Heat	0.0%	28.6%	71.4%	1.29	0.49
6	Magnetism	0.0%	40.0%	60.0%	1.40	0.55
7	Oxidation	0.0%	60.0%	40.0%	1.60	0.55

### **Causes of deterioration of library materials**

Tables 2 and 3 show the causes of deterioration in both special and academic libraries. Dust (Mean=1.85 ± 0.69) was the major cause of deterioration reported in special libraries for print materials. However, in academic libraries, wear and tear due to frequent use and excessive photocopying (Mean=2.14 ± 0.70) ranked highest. The least causes of deterioration of print materials were pests (Mean=1.00 ± 0.00) for special libraries and excessive light (Mean=1.00 ± 0.00) for academic libraries.

For non-print materials, frequent use ranked highest among the causes of deterioration for both special (Mean=2.11 ± 0.60) and academic (Mean=1.86 ± 0.70) libraries. However, the least causes of deterioration were magnetism (Mean=1.17 ± 0.41) for special libraries and biological agents (Mean=1.14 ± 0.38) for academic libraries.

### **Preservation and conservation techniques of print and non-print by special and academic libraries**

Table 4 presents the result of the analysis of the various preservation and conservation techniques used by both special and academic libraries.



**Table 4: Preservation and conservation techniques of library materials – Print and Non-Print**

S/N	Techniques (Special)	Never (0)	Occasionally (1)	Regularly (2)	Mean	Std
1	Cleaning and dusting	0.0%	0.0%	100.0%	2.00	0.00
2	Binding	7.7%	30.8%	61.5%	1.54	0.66
3	De-acidification	100.0%	0.0%	0.0%	0.00	0.00
4	Photocopying	15.4%	23.1%	61.5%	1.46	0.78
5	Lamination	61.5%	23.1%	15.4%	0.54	0.78
6	Digitization (replication, emulation, encapsulation)	30.8%	38.5%	30.8%	1.00	0.82
7	Shelving to allow free flow of air	0.0%	0.0%	100.0%	2.00	0.00
8	Use of Insecticides or Pesticides	7.7%	30.8%	61.5%	1.54	0.66
9	Installing air-conditioners	0.0%	15.4%	84.6%	1.85	0.38
10	Adequate security systems to prevent vandalism and mutilation	0.0%	30.8%	69.2%	1.69	0.48
S/N	Techniques (Academic)	Never (0)	Occasionally (1)	Regularly (2)	Mean	Std
1	Cleaning and dusting	0.0%	14.3%	85.7%	1.86	0.38
2	Binding	0.0%	85.7%	14.3%	1.14	0.38
3	De-acidification	57.1%	28.6%	14.3%	0.57	0.79
4	Photocopying	0.0%	42.9%	57.1%	1.57	0.54
5	Lamination	42.9%	42.9%	14.3%	0.71	0.76
6	Digitization (replication, emulation, encapsulation)	28.6%	42.9%	28.6%	1.00	0.82
7	Shelving to allow free flow of air	0.0%	14.3%	85.7%	1.86	0.38
8	Use of Insecticides or Pesticides	0.0%	42.9%	57.1%	1.57	0.54
9	Installing of air-conditioners	0.0%	28.6%	71.4%	1.71	0.49
10	Adequate security systems to prevent vandalism and mutilation	0.0%	14.3%	85.7%	1.86	0.38

Cleaning and dusting (Mean=2.00 ± 0.00) and shelving to allow free flow of air (Mean=2.00 ± 0.00) were the most used preservation and conservation techniques for both print and non-print materials in special libraries. However, in academic libraries, adequate security systems to prevent vandalism and mutilation (Mean=1.86 ± 0.38) was also mostly used in addition to cleaning and dusting (Mean=1.86 ± 0.38) and shelving to allow free flow of air (Mean=1.86 ± 0.38). The least used preservation and conservation technique is de-acidification in both special (Mean=0.00 ± 0.00) and academic libraries (Mean=0.57 ± 0.79).

## Use of ICT in preservation and conservation of library materials

Table 5 presents the result of the analysis of the use and frequency of use of ICT in preservation and conservation by the libraries.

**Table 5: Utilization of ICT for preservation**

S/N	Techniques (Special)	Never (0)	Occasionally (1)	Regularly (2)	Mean	Std
1	Refreshing	9.1%	45.5%	45.5%	1.36	0.67
2	Technology preservation	18.2%	36.4%	45.5%	1.27	0.79
3	Migration	18.2%	36.4%	45.5%	1.27	0.79
4	Emulation	45.5%	36.4%	18.2%	0.73	0.79
5	Encapsulation	45.5%	27.3%	27.3%	0.82	0.87
6	Microfilming	100.0%	0.0%	0.0%	0.00	0.00
S/N	Techniques (Academic)	Never (0)	Occasionally (1)	Regularly (2)	Mean	Std
1	Refreshing	16.7%	33.3%	50.0%	1.33	0.82
2	Technology preservation	16.7%	50.0%	33.3%	1.17	0.75
3	Migration	0.0%	50.0%	50.0%	1.50	0.55
4	Emulation	50.0%	16.7%	33.3%	0.83	0.98
5	Encapsulation	33.3%	50.0%	16.7%	0.83	0.75
6	Microfilming	100.0%	0.0%	0.0%	0.00	0.00

For the special libraries, the major application of ICT for preservation is in refreshing (Mean=1.36 ± 0.67) although this is only regularly used by 45.5% of the libraries. This is followed by Technology preservation (Mean=1.27 ± 0.79) and Migration (Mean=1.27 ± 0.79). For the academic libraries, Migration (Mean=1.50 ± 0.55) was mostly used, followed by refreshing (Mean=1.33 ± 0.82) and technology preservation (Mean=1.17 ± 0.75). Microfilming was never used for preservation in both library types.

## **Written policies guiding the conservation and preservation of library materials**

Findings from interview held with respondents revealed that none of the academic libraries had a written policy and only two (2) of the special libraries reported having written policies guiding conservation and preservation.

*“Yes the policy is in a written document that spells out the functions and duties in the library and that is what the library officials follow” (Male, Principal Librarian).*

*“Yes we have a written preservation and conservation policy, it is documented. In terms of preservation we don't loan out reference books, borrowing of books has certain processes and anyone who fails to keep to the rules would lose the privilege of using the library. Readers are required to pay for replacement in the event of damage and any person who mutilates a library material would face disciplinary action from the management. Books should be left on the tables after use; shelving is done by staff and not readers” (Male, Senior Librarian).*

Three respondents from the four special libraries without written policies on preservation and conservation believed that having a written policy would be more beneficial to the libraries. The absence of a written policy limits the functioning of the libraries.

*“No we do not have a policy. A written policy would help the library achieve more on preservation and conservation” (Male, Principal Librarian).*

*“We don't have a conservation and preservation policy. It would be better if we have a written policy; it would help us know what to do, how and when to do them” (Male, Senior Librarian).*

*“We don’t have a policy, because if we have a policy it would enable us to do anything we want to do even binding. But now anything you want to push to management they will say there is no money. Apart from dusting and cleaning and asking the porter and the security to be vigilant, we don’t do anything extra. Moreover, this is a special library, the people who come here are not just students, and they know that they are going to a special library. We are dealing with high profile and mature people so we are not expecting frequent mutilation of our books. If there was a policy we would be able to buy our materials and then probably have a separate room for some of our reserved materials and we should be able to even acquire more in terms of these digital materials and things like that” (Male, Chief Librarian).*

However, one of the respondents from the special libraries expressed the view that a library can function well without a written policy on preservation and conservation.

*“There is no policy but the library has departments that work hand in hand, we do collective responsibility no duty is scheduled to any one person. Even if there is a written policy and it is not followed it becomes redundant, it is not every time you open a book for guideline or policy as long as you know what you are doing and everybody works collectively things would be fine” (Male, Chief Library Officer).*

All the academic libraries reported that they have policies on preservation and conservation but these policies are undocumented.

*“We have but it's not written. Well, there is a need to put it on paper so that everybody will know about it. (Male, Head, Reader Services).*

*“We have a policy but it is not written although some are written i.e. our rules and regulation but we do not have a comprehensive one. Even if there is a written policy there must be adequate supervision and management, the essence of the policy is to serve as a guide” (Male, University Librarian).*

*“I don’t feel there is a library without a policy, just like when you talk of a collection development policy, almost all libraries have but it’s not written, so in the same way, almost all libraries will have policy but will not be written. If there is a written document its fine only that it has to be updated and regularly revisited for one reason or the other, because when you have a document that is not updated you know it’s obsolete.” (Male, University Librarian).*

### **Challenges to effective preservation and conservation of library materials**

Data collected through interview of respondents revealed that funding is the major challenge to effective preservation of library materials. According to the respondents, adequate funding would enable libraries provide necessary facilities for preservation.

*“The major challenge is finance, where there is no fund there is nothing you can do, the fund released to library is too small it is not adequate and it affects other things” (Male, Principal Librarian).*

*“The constraint to any place is money, in some libraries at the beginning of every year they would allocate money that would be utilized by the library/librarian but here in our establishment it is at the discretion of the Executive Director that we get materials and he could approve or disapprove our needs. Also, part of the constraint we have is*

*power sometimes we don't experience power for a long time and it is costly to use generating sets so it still falls back to funds” (Male, Chief Library Officer).*

Other challenges mentioned included lack of or non-functioning of some basic facilities such as air-conditioners for proper aeration of library books; and CCTV for security. Also reported were leadership commitment, shortage of manpower, user training etc.

*“The number one problem is the AC not working in the library; the AC gives the books strength and reduces dust in the library. Inadequate finance is also another problem if there is enough money all the problems can be solved” (Female, Chief Library Officer).*

*“There are some equipments that can be introduced to preserve materials now that library is technology driven. For example CCTV would reduce theft and the need for employing security men would also be minimal. Another thing is the bar coding that records if a book is being borrowed and if it is not recorded the door would not open for the book to be taken because all the barcodes of the books have been previously stored on the system. All these things though depend on the availability of funds, there is no management that doesn't want good things for the organization but the constraint is funds, everything is anchored on funding” (Male, Principal Librarian).*

*“The normal one is availability of funds and ability to get the necessary equipment required for preservation. Also leadership commitment, that is, what is management's perception about conservation and preservation? Do they have the will power to drive these practices in the library as these would also affect the amount of funds committed to preserving and conserving the materials. Also important is the technical knowhow, technical manpower and training needs for the staff to be able to handle preservation.*

*For preservation it is a whole gamut, a whole package that involves usage because you have rules guiding the handling of materials and you need to educate and train your clientele on usage. I believe that one other thing is the lack of stated policies that can actually designate the preservation and conservation to a full unit of its own so that they can take preservation and conservation more seriously. Just as there is a circulation unit and bindery section, a whole unit should take care of preservation so it would be more meaningful and it would bring to consciousness the importance of preservation” (Male, Principal Librarian).*

*“Equipment is a challenge especially for the non-print materials and for the process of digitization; we are not fully equipped yet although work is in progress to acquire the necessary machineries”(Male, Principal Librarian).*

*“This is a very young and dynamic library, one of the challenges we face is that we usually have so many resources coming in. While you are trying to digitalize a set of student theses another comes in and so we have to keep working on the hour so as to meet up with targets. Also everybody talks about budgetary factors, preservation and conservation goes beyond using minor machines, so being able to buy equipment and machineries needed for conservation and preservation is another challenge” (Male, Librarian).*

### **Test of Hypotheses**

The following hypotheses were tested in the study:

#### **Hypothesis 1**

**H<sub>0</sub>:** There is no significant difference in the cause of deterioration of library materials in special and academic libraries.

**H<sub>1</sub>:** There is a significant difference in the cause of deterioration of library materials in special and academic libraries.

The result of the Mann-Whitney U test is presented in Table 6.

**Table 6 Differences in Causes and Level of Deterioration**

Causes of Deterioration	Libraries	Mean Rank	Special and Academic Libraries		
			Mann – Whitney U	Z	Asymp. Sig. 2-Tailed
Bad Shelving	Special	10.73	42.500	-0.457	0.648
	Academic	10.07			
Dust	Special	9.27	29.500	-1.380	0.167
	Academic	12.79			
Excessive Light	Special	10.23	42.000	-0.734	0.463
	Academic	11.00			
Moisture	Special	10.00	39.000	-0.611	0.541
	Academic	11.43			
Pests	Special	11.00	39.000	-1.363	0.173
	Academic	9.57			
Wear and Tear due to frequent use or excessive photocopying.	Special	11.54	32.000	-1.222	0.222
	Academic	8.57			
Atmospheric Pollutants	Special	1.00	23.000	-0.707	0.317
	Academic	2.00			
Biological Agents	Special	8.63	29.000	-0.391	0.480
	Academic	7.29			
Dust	Special	8.22	21.500	-1.166	0.696
	Academic	8.86			
Frequent Use	Special	7.39	25.000	-.0797	0.426
	Academic	9.93			
Humidity and Heat	Special	7.78	29.000	-0.325	0.745
	Academic	9.43			
Magnetism	Special	8.22	11.500	-0.825	0.409
	Academic	8.86			
Oxidation	Special	6.58	12.000	-1.042	0.297
	Academic	5.30			



The results show that all the variables have p-value  $> 0.05$  which signifies that there is no significant difference in the causes of deterioration of library materials in special and academic libraries. Hence, the null hypothesis,  $H_0$  is not rejected.

### **Hypothesis 2**

**H<sub>0</sub>:** There is no significant difference in the types of deterioration experienced in special and academic libraries.

**H<sub>1</sub>:** There is a significant difference in the types of deterioration experienced in special and academic libraries.

### **Table 7: Differences in Types and Frequency of Deterioration**

Types of Deterioration	Libraries	Mean Rank	Special and Academic Libraries		
			Mann – Whitney U	Z	Asymp. Sig. 2-Tailed
Vandalization of Library Materials	Special	9.81	36.500	-.885	0.376
	Academic	11.79			
Mutilation of Pages	Special	10.58	44.500	-.091	0.927
	Academic	10.36			
Broken book spines	Special	10.08	40.000	-.575	0.566
	Academic	11.29			
Brittle Library Materials	Special	11.42	33.500	-1.055	0.291
	Academic	8.79			
Destroyed by rodents/pests	Special	10.12	40.500	-.569	0.570
	Academic	11.21			
Changing of colour in photographic materials	Special	6.00	12.000	-1.273	0.203
	Academic	8.60			
Cracking and scratching of sound and optical discs	Special	6.69	17.500	-1.369	0.171
	Academic	9.50			
Surface blemishes leading to fading of the image	Special	5.86	13.000	-.813	0.416
	Academic	7.40			
Permanent deformation of sound discs	Special	7.63	23.000	-.155	0.813
	Academic	7.33			
Poor playback quality of sound discs	Special	7.63	23.000	-.147	0.883
	Academic	7.33			
Loss of data on magnetic media	Special	3.88	2.500	-.750	0.453
	Academic	2.75			
Distortion of sound quality on magnetic media	Special	3.38	3.500	-.274	0.784
	Academic	3.75			

Table 7 shows that at a significance level of 0.05, there is no significant difference in the types of deterioration of library materials in special and academic libraries. Hence, the null hypothesis,  $H_0$  is not rejected.

### Hypothesis 3

**H<sub>0</sub>:** There is no significant difference in the techniques of conserving and preserving library materials in special and academic libraries.

**H<sub>1</sub>:** There is a significant difference in the techniques of conserving and preserving library materials in special and academic libraries.

**Table 8 Differences in Conservation and Preservation Techniques**

Special and Academic Libraries				
Type of Techniques	Library Type	Mann – Whitney U	Z	Asymp. Sig. 2-Tailed
Cleaning and Dusting	Special	39.000	-1.363	0.173
	Academic			
Binding	Special	27.000	-1.654	0.098
	Academic			
De-acidification	Special	26.000	-2.488	0.013
	Academic			
Photocopying	Special	44.500	-0.091	0.927
	Academic			
Lamination	Special	38.500	-0.618	0.536
	Academic			
Digitization (replication, emulation, encapsulation)	Special	45.500	0.000	1.000
	Academic			
Shelving to allow free flow of air	Special	39.000	-1.363	0.173
	Academic			
Use of Insecticides or Pesticides	Special	45.000	-0.046	0.963
	Academic			
Installing of air-conditioners in the library	Special	39.500	-0.685	0.493
	Academic			
Provision of adequate security systems to prevent vandalism and mutilation	Special	38.000	-0.791	0.429
	Academic			

As shown in Table 8, generally there is no significant difference in the techniques for conserving and preserving library materials in both special and academic libraries. However, the study observed a significant difference in the use of De-acidification technique ( $p = 0.013$ ). Irrespective of this observation, the null hypothesis, **H<sub>0</sub>** is not rejected.

## Discussion and Conclusion

Results from this study showed that broken book spines was the major type of deterioration for print resources in both special and academic libraries, while destruction by rodents and pests was least experienced. Ogunniyi and Adejube (2014) similarly reported that the most incidences of deterioration of library materials were broken spines, vandalism and mutilation. The low incidences of destruction of print resources by rodents and pests could be generally attributed to the libraries' policy of not allowing food or drinks in the library and the regular use of insecticides and pesticides.

Although the findings did not reveal a significant difference in the type of deterioration experienced by both special and academic libraries, loss of data on magnetic media was the highest degradation experienced by special libraries while it was changing of colour in photographic materials for academic libraries. Permanent deformation of sound discs was the least problem in both library types for non-print materials. The major causes of deterioration of print library materials in both special and academic libraries were dust and wear and tear due to excessive use and photocopying. This finding supports Olatokun (2008) and Ogbodo (2011) who reported that dust and disintegration of books were common problems faced by libraries. The least experienced causes of deterioration for both libraries were pests, excessive light, moisture and bad shelving.

The most commonly used techniques for preservation and conservation in both special and academic libraries were shelving to allow free flow of air, cleaning and dusting, use of insecticides or pesticides, installation of air-conditioners and provision of adequate security systems to prevent vandalism and mutilation while the least used technique was de-acidification. The most commonly used digital preservation techniques by both library types

were refreshing, technology preservation, and migration. It should also be noted that not all the libraries employed the use of ICT for preservation and conservation.

Findings also revealed that only few of the libraries had written policies on preservation and conservation of library materials and these were mainly special libraries. None of the academic libraries reported having a written policy. While the findings from this study contradicts Olatokun (2008), it supports Owowoh and Iwhiwhu (2010) who similarly reported the non-availability of written policy in higher education institutions. A written policy would go a long way in aiding conservation and preservation.

A major challenge faced in implementing preservation and conservation techniques in both special and academic libraries is funding. Other challenges include lack of necessary facilities, inadequate manpower, inadequate training of staff and users, security, autonomy and administrative lags, power etc. The findings were similar to those reported in Olatokun (2008) and Owowoh and Iwhiwhu (2010) where it was stated that inadequate funding was the most severe inhibitor to effective preservation and conservation, while other challenges such as administrative bottleneck and lack of qualified staff were also reported.

Conservation and preservation of deteriorating information resources in libraries has become a global phenomenon to which libraries must aggressively respond if their mission of providing information needs of their patrons would be met. Although preservation and conservation techniques were prominent in the studied special and academic libraries, not all the techniques are being used effectively apart from the traditional methods of cleaning, dusting and shelving of materials to allow free flow of air which was common to both library types. Also, there was

no difference in the use of ICTs for preservation and conservation by the selected libraries, the use of ICTs was limited or completely absent in some libraries.

Since most of the surveyed libraries had unwritten policies for preservation and conservation of library materials, it is recommended that the policies to set out guidelines on preservation and conservation be documented so that they can be properly implemented and followed.

Most of the libraries in this study lack sufficient funding to promote the use of preservation and conservation techniques. Hence, it is recommended that a percentage of the library's budget be statutorily allocated for preservation and conservation of library materials. The world has become a global village and use of ICTs has become the order of the day. It has been touted that digitization could be a major solution to the problem of preservation and conservation, thus, an increase in the use of ICTs and modern technologies for the preservation and conservation of library materials is recommended. Library staff should also be trained regularly on how to maintain good housekeeping practices and careful handling of library materials.

## **REFERENCES**

Aina, L. O. (2004). *Library and information science text for Africa*. Ibadan: Third World Information Services. Information Sciences Africa.

Akande S.O. (2009). Knowledge, perception and attitudes of library personnel towards preservation of information resources in Nigerian Federal University Libraries. *Library philosophy and Practice*, 303. Retrieved from <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1308&context=libphilprac> 12th March, 2015.

- Emojorho, D. & Nwalo, K.I.N. (2009). Availability and Use of ICTs in Collection Management in University and Special Libraries in the Niger-Delta Region, Nigeria. *Library Philosophy and Practice*, 243 Retrieved from <http://digitalcommons.unl.edu/libphilprac/243/> 26th July, 2015
- IFLA Principles for the Care and Handling of Library Materials (2010). International Preservation Issues, Number One. (Internet) Retrieved from <http://archive.ifla.org/VI/news/pchlm.pdf>. 26th July, 2015
- International Records Management Trust (1999). Managing Public Sector Records: A Study Programme. Retrieved from [http://www.irmt.org/documents/educ\\_training/public\\_sector\\_rec/IRMT\\_manage\\_archives.pdf](http://www.irmt.org/documents/educ_training/public_sector_rec/IRMT_manage_archives.pdf) 28th November, 2014.
- Jordan, K.S. (2003). Special collections and preservation: In Encyclopedia of library and information science. CRC Press.
- National Library of Australia (2004) Preservation Policy. Retrieved from: <http://www.nla.gov.au/policy/pres.html>. 19th February, 2015.
- Njeze, M.E. (2012). Preservation and Conservation Issues in Selected Private Universities in South-West Nigeria. *Library Philosophy and Practice*, 761. Retrieved from <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1835&context=libphilprac> 6th September, 2015.
- Ogbodo, C. (2011). Preservation of Information Sources in Polytechnic Libraries in South-East States of Nigeria. *Journal of Research in Education and Society* 2(1): 230-235

- Ogunniyi, S.O. & Adejube, F.V. (2014). Strategies of Curbing Deterioration of Undergraduate projects: A Case Study of Six Selected Colleges of Education Libraries in Southern Nigeria. *Library Philosophy and Practice*, 1036. Retrieved from <http://digitalcommons.unl.edu/libphilprac/1036> 28th November, 2014
- Olatokun, W.M. (2008). A survey of preservation and conservation practices and Techniques in Nigerian University Libraries. *Library and Information Science Research Electronic Journal* 18(2) Retrieved from [http://libres-ejournal.info/wp-content/uploads/2014/06/Vol18\\_I2\\_Olatokun\\_FINAL.pdf](http://libres-ejournal.info/wp-content/uploads/2014/06/Vol18_I2_Olatokun_FINAL.pdf) 26th July, 2015.
- Ovowoh, R.O. & Iwhiwhu, B.E. (2010). Preserving Information Bearing Material in Higher Education Institutions in Nigeria. *Library Philosophy and Practice*, 396. Retrieved from <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1406&context=libphilprac> 3rd September, 2015
- Poll, R. (2007). Quality measures for special libraries. (Internet) Retrieved from: <http://www.ifla.org/IVifla73/papers/152-Poll-en.pdf>. 28th August, 2015.
- Sawant, S. (2014). A Study on Preservation and Conservation Practices in Academic Libraries in Mumbai. *Annals of Library and Information Studies*, 61(2): 153-159
- Shameenda, K.L.(2011). Preservation and Conservation of Library Materials, Techniques and Practices: A Case Study of the University of Zambia Libraries. In: UNZA Institutional Repository (Internet) <http://dspace.unza.zm:8080/xmlui/handle/123456789/896> 3rd September, 2015.
- Singh, S.P. (2006). Special libraries in India: Some current trends. *Library Review*, 55 (8) 520-530. Retrieved from <http://www.emeraldinsight.com/toc/lr/55/8> 5th October, 2015.



Yusuf, F. & Iwu, J. (2010). Use of academic library: A case study of Covenant University, Nigeria. *Chinese Librarianship: an International Electronic Journal*, 30. Retrieved from <http://www.iclc.us/cliej/cl30YI.pdf> 3rd September, 2014.