

**PRESERVATION AND CONSERVATION PRACTICES OF INFORMATION
RESOURCES IN LIBRARIES OF TERTIARY INSTITUTIONS IN KEBBI
STATE**

BY

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APPROVAL PAGE

This thesis has been read and approved as meeting Part of the requirements of the Department of Library and Information Sciences and School of Postgraduate Studies, Bayero University, Kano, for the award of Masters Degree in Library and Information Sciences (MLS).

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DECLARATION

I hereby declare that this work is the product of my research efforts undertaken under the supervision of Dr. B. M. Abubakar and has not been presented anywhere for the award of a degree or certificate. All sources have been duly acknowledged.

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CERTIFICATION

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DEDICATION

This research work is dedicated to Almighty God who has been on my side right from my primary education down to the master's level. Special dedication is also sent to my parents, brothers, sisters, my beloved wife Mrs. R. F. Adebayo, my children, and all my friends

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ABSTRACT

This study investigated the practices of preservation and conservation of information resources in libraries of tertiary institutions in Kebbi State: Kebbi State Federal University Kalgo, Kebbi State University of Science and Technology, Aliero, Waziri Umaru Federal Polytechnic Birnin Kebbi, Kebbi State Polytechnic Dakingari, Adamu Augie College of Education, Argungu, College of Agriculture and Animal Husbandry, Zuru, College of Basic Advanced Studies Yauri, School of Nursing Brnin Kebbi. Qualitative research methodology was adopted for the study, using narrative based design. Purposive sampling method was also employed in selecting eight (8) librarians from tertiary institutions studied. Structured interview and observation were used for data collection. The findings revealed that there were two types of library resources in tertiary institutions in Kebbi State: Print resources which include: books, journal, pamphlet and student projects. Non-printing resources such as computers, CD ROM, flash drive, hard disc, internet, television, etc. Also, the findings found various preservation and conservation practices adopted by the libraries studied and among them are user's education, cleaning and dusting, lamination, fumigation, adequate air-ventilation, the use of standby fire extinguisher etc. Also the findings showed found a lot of challenges affecting preservation and conservation of library resources such as shortage of power supply, lack of trained personnel on preservation and conservation, etc. however, in the effort to eliminate or reduce the preservation challenges in the tertiary institutions in Kebbi State. It was recommended among others that government at both federal and state should equip the libraries in question with necessary resources such as stand by generator, trained personnel on preservation and conservation, functioning air conditioning etc; that efforts should be made to adopt digital preservation of library resources and that librarians should not relent in their efforts to eliminate or reduce the preservation and conservation challenges in their institutions.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Library is a repository of wisdom and a social institution charged with the responsibility of disseminating knowledge to the people, without any discrimination. The holdings of libraries are the priceless heritage of mankind as they preserve facts, ideas, thoughts, accomplishments and evidences of human development, in multifarious areas, age and directions (Olatokun, 2008). The past records constitute information that is indispensable to the present generation and the generation to come. Any loss of such information materials is almost irreplaceable. Libraries provide resources for knowledge acquisition, recreation, personal interests and inter-personal relationships for all categories of users. However, in an academic environment, attention is basically focused on academic and non-academic staff, students and researchers.

According to Ottong (1994), the goal of higher education can be seen as the pursuit of knowledge in the broadest possible way. It would be impossible to give quality education without a functional library. The library shares a common objective with the Institution (Universities, Polytechnics and Colleges) as the case may be, to make the learner a knowledgeable personality. It is therefore, necessary to have an academic library with modern infrastructure and adequate collection of information resources both in prints and electronic formats to meet the major objective of the higher institution. 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 record of human experience to which users may turn for data or information. The Academic library is organized as an essential resource centre which no student and staff can afford to dispense with, if they want to attain the required academic goals. According to Ottong (1994), the significant of the library can be further elaborated as follows:

1. Enhance education: assist both lecturers and students achieve their educational objective;
2. Provides a conducive environment for studying;
3. Enhances reading as a habit;
4. Promotion and dissemination of research works;
5. Enabling networking between researchers

It would be impossible for library to perform above functions without adequate and relevant library information resources. Library resources, according to Popoola (2011), include everything that is used in providing the required services to the clientele. According to him, library materials consist of media materials such as: computer, databases, library software; non print materials such as: CD ROMs, audio and video tape; and print materials like magazines, books and journals etc. Library materials deteriorate faster when publishers use sub-standard materials like paper, which changes colour when exposed to either internal or external light, or the wear of paper glue and thread for sewing the book. This is very rampant in our local publications. Since the information

resources have not gotten the capacity to last forever, librarians must be ready and ever interest in preserving and conserving these information resources for future generations.

Preservation and conservation are the most urgent issues to be tackled by libraries all over the world. Preservation and conservation issues are complicated by the diverse nature of library materials, both in composition and structure. Fortunately, librarians, manufacturers, conservators and publishers become more cognizant of preservation and conservation issues and as such, they are gradually resolving them. Preservation and conservation have to do with all steps taken to prolong the life span of library materials in a usable condition for generations yet unborn. Preservation extends beyond the traditional book to all vehicles of communicating information which include books, microforms, compact disks, video disks and other forms of non book media. The issues of preservation and conservation of library resources are not new in the field of library science. In fact, it has been a major concern since libraries were established.

The concept of preservation refers to all necessary strategies, measures and steps invested into prolonging the lives of library information resources. According to the IFLA Principles for the Care and Handling of Library materials (2010), 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. 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. Similarly, Muhammad (2006) viewed preservation as activities

associated with maintaining library and archival materials for use, either in their original form or in some other format.

Conservation on the other hand, is regarded as an act of preserving, protecting and shielding materials from destructive influences that shorten their life span. The term conservation is defined by the IFLA principles for the care and handling of library material (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. To this end, certain conservative and perfective measures are needed to slow down deterioration so as to avoid losing these library information resources.

In academic libraries, librarians are strictly charged with the responsibility of preserving and conserving library resources to meet the need of their community. Librarians are usually employed to preserve these records by mounting surveillance, ensuring that the resources are kept in good conditions. They cared less whether people asked for and made use of the resources or not. Even the few materials made use of, were used only in the library and under the strictest surveillance of the librarians. Librarians never thought of free access or lending their materials to their users, they were only interested in collecting, storing and conserving materials for future generation.

The invention of printing by Gutenberg which brought explosion in the production of library materials and the massive quest for education following the period of the Renaissance; led to the change in the professional attitudes of librarians towards their collections. According to Nzotta (1982), the pendulum swung to the other extreme and the emphasis shifted to dissemination rather than preservation. Librarians began to allow users open access to their collections and encourage their use and this led to user's education. The proliferation of researchers in the universities and project work in colleges and schools greatly increased the use of libraries and thus posed threats to library resources. Akussah (1991) observes that the information world stands the imminent risk of losing so much of its precious written heritage following the deterioration of paper records. Over-use became a major threat to books, the greater the use, the more vulnerable the volumes. Increased accessibility also increased threat from thieves and other delinquent readers.

Open access to academic library collection led to the increased demands for papers and making of paper fibre to meet the demand that leads to a change for worse in the paper making processes. This in turn has affected durability of materials made from papers. Modern papers can no longer stand the environmental hazards like fungi, insects, humidity, excessive light and temperature. The search for ever cheaper paper to meet the increased demand led in the later part of 19th century to the manufacture of paper from ground wood pulp. The sizing agents used for the bleaching leave increased acids in the paper.

The inherent poor quality of modern paper is one of the greatest problems of all books in an academic library. In addition, poor environmental and storage conditions contribute

significantly to the deterioration and destructions of paper-based records in any academic library. In the face of all these threats, many people have become apprehensive of the survivability of library materials for future use. The researcher intends to use operational conservation theory because some components of the model are very relevant to the variable of the study.

This research aims at investigating the preservation and conservation practices in tertiary institutions in Kebbi State, Nigeria. Narrative qualitative research design is proposed for the study.

1.2 Statement of the Problem

The library materials which are unique in nature because of the information they contain deserve to have maximum preservation and conservation practice in order to retain the information they contain for a very long period of time. Academic libraries in developing countries such as Nigeria, there is a dearth of valuable publications because most of these library resources are not properly protected in these libraries. Despite that these libraries struggled and suffered to acquire library resources which are not easy to be replaced when they are lost are not properly preserved and conserved yet, the information contained in these library resources can serve library users for many years. Besides, these resources are the major sources of reference and consultation to all who are in need of one information or the other and again, these resources lack proper preservation and conservation policies in these libraries.

Preservation of information resources is very crucial to the survival of any library. In fact, without good preservation system, there can be no library, because all the resources can

get lost or perish. However, despite the above statement, many academic libraries fail to recognize the vulnerability of their collections to loss, through improper and poor preservation and conservation of the collections.

Collections can be threatened not just by theft and vandalism, but by disasters such as fire, flood, tornado, hurricane and earthquake as well as damage from careless handling or poor environmental conditions and the poor quality of the paper used. Thus, any repository seeking to provide the best possible security for its collections must put in place, coordinated policies that address all of these threats. Providing the best protection for building and collections from the most common causes of deterioration and loss is a basic principle of preventive maintenance.

Ogunmilade (1996) observed that, of all the problems facing university libraries in Nigeria today, none is as virulent, persistent and agonizing as the conservation and preservation of their resources. Unless positive attitude towards preservation and conservation is exhibited, academic libraries may no longer be able to accomplish their roles of supporting teaching, learning and research in their institutions. Most of the materials available for the preservation and conservation are very expensive to replace once lost and most importantly contain vital information which may not be acquired by the library due to financial constraints. With this, therefore, has created a need for in-depth investigation into the various methods used for preservation and conservation in academic libraries in tertiary institutions in Kebbi State.

The problems of academic libraries in tertiary institutions likely may include inadequate fund used for the procurement of modern preservation and conservation equipments, lack

of skilled manpower to handle preservation and conservation, the depreciation rate of quality of paper production which deteriorate due to heat, sun, moisture and acid, making paper to brittle and de-colour among others. Added to this, there could also be biological problems such as fungi growth, insects, chemical deterioration and physical security, coupled with training for staff to keep abreast with development. The question therefore, is, whether or not academic libraries in Kebbi State, are able to preserve and conserve their resources effectively with all these salient problems. If not, what efforts have they made to meet these challenges of conserving and preserving information resources for future use? The above and many others reasons make this present research work desirable.

1.3 Research Questions

This research sought to provide answers to the following questions:

1. What types of library resources are available in tertiary institutions in Kebbi State?
2. What practices are used for preserving library information resources in the institutions under study?
3. What practices are used for conserving library information resources in the institutions under study?
4. What types of:
 - (a) Preservation challenges exist in tertiary institutions in Kebbi State?
 - (b) Conservation challenges exist in tertiary institutions in Kebbi State?

5. What measures are taken in the institutions in question to eliminate or reduce:
 - (a) Preservation challenges?
 - (b) Conservation challenges?
6. What level of success is attained in efforts to:
 - (a) Eliminate or reduce the preservation challenges in the tertiary institutions in Kebbi State?
 - (b) Eliminate or reduce conservation challenges in the tertiary institutions in Kebbi State?
7. What skills do librarians have in preservation and conservation in libraries under study?
8. What are the training needs in preservation and conservation of library resources in the libraries under study?

1.4 Research Objectives

The main objective of the study is to investigate the preservation and conservation practices of library information resources in libraries of tertiary institution in Kebbi State, Nigeria. However, the specific objectives of the study were to:

1. Find out the types of library resources available in tertiary institutions in Kebbi State.
2. Determine the types of practices used for preserving library and information resources in the institutions under study
3. Determine the types of practices are used for conserving library and information resources in the institutions under study

4. Ascertain the types of:
 - (a) Preservation challenges exist in tertiary institutions in Kebbi State.
 - (b) Conservation challenges exist in tertiary institutions in Kebbi State.
5. Find out the types of measures taken in the institutions in question to:
 - (a) Eliminate or reduce preservation challenges.
 - (b) Eliminate or reduce conservation challenges
6. Establish the level of success attained in efforts:
 - (a) To eliminate or reduce the preservation challenges in the institutions in question.
 - (b) To eliminate or reduce the conservation challenges in the institutions in question.
7. Find out the skills librarians have in preservation and conservation in libraries under study
8. Find out the training needs in preservation and conservation of library resources in the libraries under study

1.5 Significance of the Study

The findings of the study are of immense benefit to the following: Library administrators, the library staff as well as other researchers. The findings of this study hopes to raise awareness of the importance of preservation and conservation of library information resources by the library staff in Tertiary Institutions in Kebbi State. It is further hoped that the findings of the study would contribute to improving preservation and conservation practices that already existed in Tertiary Institutions Libraries in Kebbi State. Finally, it is hoped that the study would stimulate the initiation of in-service

training programmes at the academic library studied, for library staff and library administrators in order to effectively participate in the day-to-day care of their library information resources. Scholars, researchers and others who are interested in the area will also find the study and its report valuable. In addition, the study would add to the existing literature in the area.

1.6 Scope and Limitation of the Study

The subject matter and area of coverage for this study is restricted to the issue of preservation and conservation practices of library information resources in Tertiary Institutions in Kebbi State, Nigeria. The populations are all the professional librarians available in the tertiary institutions in Kebbi State. The institutions are: Federal University, Birnin Kebbi; Kebbi State University Aliero; Waziri Umaru Federal Polytechnic, Birnin Kebbi; Kebbi State Polytechnic, Dakingari; Adamu Augie College of Education, Argungu; College of Agriculture, Zuru; College of Arts and Social Sciences, Yauri and School of Nursing, Birnin Kebbi.

The study is limited to preservation and conservation practice of library and information resources in eight (8) tertiary institutions in Kebbi State.

1.7 Definition of Terms

Conservation: refers to the treatment and repair of individual items to slow decay or restore them to a usable state in the libraries under study

Deterioration of library resources: the wearing away, loss in quality or value of the library resources in the libraries under study

Library: an institution or department charged with the care of collection of books and the duty of making them accessible to those who require use of them in the institutions under study

Library Resources: all materials held in Kebbi State Tertiary Institution's Library, which include books, journal, newspapers, manuscripts, maps, student project, CD Rom, cassettes etc.

Preservation: is an umbrella term for an array of activities; principles, practices, and organizations that ensure the usability, longevity, and accessibility of recorded knowledge in the libraries under study

Preservation and Conservation Practices: the ways or methods of preventing library information resources against destruction or deterioration in the libraries under study

Tertiary Institution: These include universities as well as institutions that teach specific capacities of higher learning such as colleges, technical training institutes, community colleges, nursing schools, research laboratories, centers of excellence, and distance learning centers.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

Preservation and Conservation matters have attracted the attention of writers, scholars and commentators alike. Issues relating to preservation and conservation have been discussed extensively in books, journals, theses, and other sources. In respect to this study, the review was done under the following sub-headings, thus:

2.2 Concept and Significance of Library Information Resources.

2.3 Concept and Significance of Preservation and Conservation in Academic Libraries

2.4 Factors Responsible for the Destruction or Deterioration of Information Resources

2.5 Preservation and Conservation Measures and Practices among Academic Libraries

2.6 Challenges Affecting Effective Preservation and Conservation Practices in Academic Libraries

2.7 Theoretical Framework / Conceptual Framework

2.8 Review of Related Empirical Study

2.9 Summary of the Review and Uniqueness of the Study

2.2 Concept and Significance of Library Information Resources

The philosophy of librarianship is based on the concept of library services and provision of relevant information resources for users. Professional Librarians continue to strive to collect, store, organize and disseminate all forms of recorded knowledge in order to satisfy both present and future information needs of users. Adeoye and Popoola (2011) described Library resources as the stock in trade of librarians. These are the materials in

the library that make services possible. They are the materials which the users come to consult, read or borrow.

Library resources are many and varied, but they can be divided into two broad categories namely “**printed** and **non printed** materials”. The Printed materials are books, pamphlets periodicals, newspapers and reference resources. Non-printed materials are however, often referred to as audio-visual resources. They are the product of advanced technology, some of which require special equipment to operate. Non-printed resources can be grouped into three (i.e. Audio, visual and audio-visual). We also have electronic resources as part of resources in the libraries. Popoola and Haliso (2009) defined library information resources as those information bearing materials. That is in both printed and electronic formats, such as textbooks, journals, indexes, abstracts, newspapers and magazines, reports, CD-ROM databases, internet / E-mail, video tapes/cassettes, diskettes magnetic disk, computers, micro forms etc.

Fayose in Adeoye and Popoola (2011) identified a library resource as those materials which enable libraries to carry their function out effectively. They are made up of books and other information bearing media. Library resources can be divided into groups according to their functions and level of scholarship or according to their different formats. In tertiary institutions for example the resources fall into two major categories according to the level of scholarship and their function. These include study/teaching materials and research materials.

The significances of library information resources are:

- It facilitates the planning and implementation of learning programs that will equip students with the skills necessary to succeed in a constantly changing social and economic environment. Through resource-based programs, students acquire skills to collect, critically analyze and organize information, problem-solve and communicate their understandings.
- It provides and promotes quality fiction, to develop and sustain in students, the habit and enjoyment of reading for pleasure and to enrich students' intellectual, aesthetic, cultural and emotional growth.
- It caters for differences in learning and teaching styles through the provision of and equality of access to, a wide range of materials, fiction and non-fiction, print, audio, video and digital.
- It provides educators with access to relevant curriculum information and professional development materials within and outside the educational system; and opportunities to cooperatively plan, implement and evaluate learning programs which integrate information resources and technologies (Usoro, 2007).

2.3 Concept and Significance of Preservation and Conservation in Libraries

There are misconceptions in the use of the concept preservation and conservation; yet, both terms are used interchangeably. Frankly speaking, preservation includes all the managerial and financial considerations, storage and accommodation provisions, staffing levels, policies, techniques and methods involved in preserving library information resources and information contained in them. Conservation on the other hand, refers to specific practices taken to slow deterioration and prolong the life of an object by directly intervening in its physical or chemical make-up (Alegbeleye, 2002).

The International Federation of Library Association (IFLA) (1986) designates preservation as the broader concept encompassing all actions relating to protection, maintenance and restoration of library collections including conservation. It therefore defines preservation to, include all the managerial and financial consideration including storage and accommodation provisions, staffing levels, policies, techniques and methods involved in preserving library and archive materials and the information contained in them. Jordan (2003) describes preservation as umbrella term for an array of activities principles, practices, and organizations that ensure the usability, longevity, and accessibility of recorded knowledge. Activities currently defining the realm of preservation of library materials include conservation (general collections repair and special collections), reformatting (microfilming, photocopying, and digitization), selection for preservation, environmental monitoring and control, care and handling of materials, disaster preparedness and recovery, standards relating to materials, practice, and techniques, commercial binding, and preservation education and training.

Preservation is the act of protecting, safe-guarding or preventing library materials from deterioration or damage. Many scholars have given various definitions to the concepts of preservation and conservation, but the central focus is that; it is an act of preventing anticipated damage to library materials. Whichever way, it is carried out, preservation must extend the useful life of library materials, and stock should be kept in usable condition thereby maximizing the social utility of the information resources.

From the above explanation, one would deduce that preservation of library materials refers to the activities associated with maintaining library materials for use, either in their original physical format or in some other format. This includes a number of procedures

from control of the environment to conservation treatment. Conservation therefore, is the treatment of library materials to stabilize their physical structure in order to sustain their survival as long as possible in their original format. Ojo-Igbinoba (1993), considered conservation as processes to use all the library resources to maintain the collection in useable condition. That is, action taken to correct deterioration and alteration. He also sees conservation as individual and collective measures taken to repair; restore, protect and maintenance of all graphic.

Conservation has been defined by University of Las Vegas (2009) as a direct method of treatment in which an item is physically or chemically changed. This includes cleaning, de-acidifying, repairing, rebinding and reformatting. All conservation treatment entails the least intrusive methods possible and use of neutral materials. Preservation and conservation therefore have to do with all the steps taken in the acquisition, organization and distribution of resources to prevent and stop deterioration of library materials.

Significance of Preservation and Conservation of Information Materials

The breakdown of information materials in libraries and information centres especially book materials is currently identified as one of the fundamental problems incapacitating libraries and information centres from meeting the information needs of their clientele. The deterioration of materials is on a broad spectrum, affecting such a great volume of materials in libraries in Africa. It arises from factors such as the quality of environment in which these information materials are stored, the way they are handle, increasing level of usage and the process of decay inherent in the materials themselves. Maravilla (1994) stated that preservation includes all the managerial and financial considerations including

storage and accommodation provisions, staffing levels, policies, techniques and methods involved in preserving library and archival materials and the information contained in them.

Edem and Feather (1997) in a study carried out on preservation and conservation arrives at the conclusion that preservation is a cord that runs through the activities of a library. Preservation includes all the protection, maintenance and restoration of information materials. Preservation involves direct and indirect actions. In preservation and conservation, consideration is given to every element that promote the protection of materials including the housing, storage system and security against threats as theft, mutilation, and poor handling. Smith (1994) sees preservation as a major concern for librarians and document lists. For a very long time in Africa, especially Nigeria, it is commonly difficult to accept the fact that large amount of documents and records are reaching the end of their natural life and the few years that they have left can only be prolong by proper handling and careful storage. It is only recently that information professionals in Nigeria realize the urgent need for establishing preservation and conservation programmes, as well as develop strategies for managing their information materials.

Preservation and conservation of information materials ensure continued supply of information, essential for documenting the history of a nation and also aiding research. It is the view of many librarians in Nigeria and other countries that we owe as much responsibility to the future generation as we owe to our present clientele. In view of limited financial resources, much emphasis should be placed on the preservation of collections to the same extent as we are concerned with acquisition and service to clients.

Okegbola (1997) writing on the importance of preservation, noted that, aside from the historical and artistic values, the global economy is on the downward trend and developing countries such as Nigeria is adversely affected. Thus, replacement of destroyed materials becomes extremely difficult.

Furthermore, he went on to state that certain materials and information contents are termed 'rare' and 'unique.' Such materials are hard to come by even when the finances are available; hence the need to guard them carefully and jealously is paramount. Information materials are sources of reference, research illustrations, effects etc. Their re-recording may be impossible as certain actions and events cannot be reenacted. The dramatic personnel involved may die; particular material may be the only one available in a given geographical area and the cost of preservation may be "peanuts" compared to the cost of replacement. Man, the creator of recorded information is mortal; similarly, the deterioration of information materials is inevitable. All that is intended in conservation is to delay the inevitable so as to satisfy the information needs of users.

2.4 Factors Responsible for the Destruction or Deterioration of Information

Resources

Deterioration of library resources refers to the wearing away, loss in quality or value of the library resources which include print and non-print resources. Deterioration of library materials is a challenge in most academic libraries. In most Nigerian libraries today, preservation is not taken seriously until most library materials starts showing traces of deterioration. According to Reed-Scott (2000), libraries currently face the intellectual problems of determining what should be preserved and what should deteriorate. Preservation problems are pushing collection managers into a more activist role, in which

they must make crucial preservation decisions, thus, growing awareness in the past decade of the magnitude of preservation problems which has resulted in a steady increase of preservation programs within research, academic, and public libraries. Efforts must be made by librarians to ensure that these valuable resources are well preserved for future generations to avoid extinction. The causes and agents of deterioration of information materials are:

Acid: this is the arch-enemy of librarians because it is a direct cause for hydrolysis. Hydrolysis is a chemical product. As time goes by, acid contaminated paper loses its strength and becomes increasingly brown, stained, and is eventually embrittled to the extent that it cannot be handled without crumbling. The pH value is a very reliable measure of acid content. pH is a measure of the hydrogen ion concentration of a substance. Acid has pH below 7, (1-6) while alkaline has pH value above 7 (8-14). According to Walker (1985), pH establishes a direct correlation between paper acidity and longevity. The more acidic the paper, the more short-lived it is. While expressing the difficulty in specifying an exact limit of pH value below which rapid acidic deterioration may take place, Alegbelcye (1996) agreed with other investigators that for permanence, pH should not be below 5.4. In other words, pH of 5.4 and below is considered as being very acidic.

Brittleness of Documents: Research has confirmed that brittle paper documents are very difficult to repair or bind and most often cannot withstand photocopying and heavy use. Brittleness may result from desiccation caused by high temperature among others. According to Walker (1985), the test for brittleness is fairly simple and objective. Alegbele in Onyemaizu (2016) referred to it as the fold endurance test which considers

the number of double folding as a measure of brittleness. The book was considered very brittle if it broke after two double folding.

Humidity: Relative humidity is defined as the amount of water vapour in a volume of air expressed as a percentage of maximum amounts that the air could hold at the same temperature. The warmer the air, the more water vapour it is capable of holding. Thus, the relative humidity decreases. Humidity causes problems if it is either too high or too low. High humidity speeds up deteriorative chemical reactions. Under conditions of extremely high humidity, water-soluble ink can offset and coated papers can stick together. Low relative humidity causes materials to become dry and brittle. Paper that is dried out can break and crumble as it is handled and flexed and covering materials on books such as vellum and shrink, causing boards to warp (Alegbeleye, 1993). Relative humidity below 45% endangers paper. On the contrary, relative humidity above 65% will lead to an abnormal increase in biological activity, since fungi starts growing above the 65% level and insects flourish at higher humidity. Furthermore, excessive humidity also acts upon the fibre of papers, softening them and diluting certain inks used to write documents.

Temperature: Unomah (1985) argued that the greatest single factor of deterioration of library materials in Nigeria is due to high temperature and humidity. Heat along with moisture, for instance, has caused accelerated chemical deterioration of paper, leather and textile materials in the library. They have also caused gum on the cover of books and other records to dry out. No matter the quality of the document, deterioration takes place when temperature is high and the exposure of these documents even for a short period causes brittleness of the materials and makes them not to last as expected.

Paper deteriorates as a result of complex chemical reactions. It is a fact in the physical sciences that most, if not all chemical reactions vary directly with temperature. They are speeded up at higher temperature and slowed down at a lower temperature. Researches have confirmed that for every increase of 10 degree centigrade in temperature, the rate of chemical activity greatly doubles and thus, the rate at which paper deteriorates also doubles. This presupposes that, if paper materials are stored at low temperature, their life expectancy will be significantly lengthened.

Papers stored at high temperature are also known to have suffered from physical breakdown, change in colour, etc. High degree of temperature is also known to accelerate the rate of biological activity (insect and mould). Madu and Adeniran, (2002) stated that, Cellulose fibers are deteriorated by hydrolysis i.e. decomposition by chemical reaction with water, oxidation and photosynthesis and each of the processes is accelerated by heat in the presence of minute quantities of iron, copper and other impurities, which are always found in paper. However, low temperature and low humidity decreases the rate of deterioration: This implies that low temperature area in the library prolong the life span of library information resources. Moreover, Unomah (2008) posited that most libraries in Nigeria have no air conditioners or fans to regulate the optimum temperature needed for proper preservation of library information resources.

Discolouration and Staining: Paper documents, overtimes, get discoloured as a result of the interplay of several factors (Walker, 1985). The most prominent cause is the reaction of radiant energy with lignin if present in the paper. This darkens the colour of the paper, turning it brownish or yellowish. Discolouration results in the reduction of legibility and makes reproduction fairly difficult.

Light: Light is very vital in the provision of services in libraries and archives, as much as possible, materials have to be identified and read. On the other hand it is one of the greatest enemies of materials especially paper. In any library or archive, there will be both artificial light (controllable) and natural light (less controllable). All types of light contribute in a way to cellulose degradation and fading of pigments and dyes. It speeds up the oxidation of paper and thus its chemical breakdown. It causes paper to be yellow or brown. Certain portions of the light spectrum are more harmful than others. Light is the most important cause of fading in information materials. (Alegbeleye, in Onyemaizu 2016), the problem associated with fading of books is traced to the use of unfiltered fluorescent light and the effect of sunlight. Many libraries and information centres are unaware of the insidious effects of fluorescent lighting systems, because they provide greater illumination than the incandescent lighting system. Materials, such as books and other paper-based information resources are light sensitive. While incandescent light is least destructive, artificial light takes a little longer to deteriorate paper materials, while sunlight damages are minimized by reducing the quality of light falling on any of these information resources. The simplest way to block daylight is to block all windows with wood or masonry and resort to artificial light which is not always desirable. The quality of light transmitted by windows is controllable with tinted glass, curtains, shades and louvers. Muhammad (2006) states that light from incandescent source generate heat and must be kept a distance from library collections. Blinds and shutters completely block out light from the sun, thus aid in temperature control by minimizing heat loss and heat generated by sunlight during the day. Filters made of special plastics help control Ultra violet (UV) radiation, and the use of special low UV florescent tubes is very important.

Atmospheric Pollutants: These constitute a major cause of deterioration of information materials (Maravilla, 1994) certain chemical compound are being formed in the air in a natural way, but man adds also an enormous quantity of these and other compounds to the air. When concentration becomes inconvenient, one talks about atmospheric pollution. It is being caused as well by waste products of industrial origin as by exhaust fumes from cars and combustion of house heating products. The concentration of these products is variable with the season of the year, the implantation of industry, density of traffic and weather conditions. Very noxious products are sulphur dioxide, carbon dioxide, nitrogen monoxide and dioxide. They react with water to form acids, accelerate hydrolysis in different materials. They also react with other chemicals, which are basic components of library and archival materials. Ordinary dust contains all kinds of materials that can be abrasive, soiling and damaging information carriers. Moreover, it is mostly a good breeding ground for all biological agents. Adcock (1998) stated that pollution is important to librarians not only because of the physiological effect it has on users, but due to its deteriorating effects on library materials. Pollution from the atmosphere like common dust, particles of dirt or soot from industrial area settle on books and unless the materials are well protected degradation begins.

Dust: this is hygroscopic in nature and when it is mixed with high humidity, it is transformed into dirt and if this dirt sticks to the surface of the books, it becomes difficult to remove. Dust acts as a nucleus around which moisture collects and this moisture provides the necessary humidity for growth of fungus and for chemical reactions, which lead to the formation of acids. Since dust and dirt are solid particles of varying size and hardness they exert abrasion on the surface of the books. Dust usually encourages the

growth of micro-organisms on most library information resources especially books formats. However, Singh (2004) asserted that the most roads are not tarred and the situation is pathetic as most libraries are located in towns while almost school libraries were situated where dust prevailed. This without doubt allows dust to enter the libraries through doors and windows, which in turn aid fast deterioration of library information resources.

Disasters: Disasters whether brought about by human error or natural events, pose the ultimate threat to collections. The results are immediate, calamitous and dramatic; unlike the slow and insidious process and deterioration that takes place in boxes and filing cabinets. Disasters, which can result from fire, flooding, storms, earthquakes or broken steam pipes, can damage or destroy a few items or entire collections. Vigilance, preparedness and recovery plans are the best guards against loss from disaster (Alegbeleye, 1996). The best response to all of the factors threatening archival collections is informed action to protect and safeguard materials from the hazard of a hostile environment. A controlled environment and proper storage procedures are important component in library and archival preservation programmes.

Insufficient Space: It stands to reason that the more crammed and cluttered the storage area is, the greater the risk of deterioration through breakage, abrasion, poor maintenance, loss and neglect in general. Furthermore, a disorganized, confused and unsystematic collection cannot be used effectively and this negates the reason for having the collections. Whereas it is difficult to create space when it is limited, additional storage can be created through more efficient use of space. Space usage should be carefully planned and effective space saving measures should be sought constantly.

Biological Agents/Factors: Maravilla (1994) states that where there is condensation or moisture due to high humidity, there is always the presence of biological growth such as contained in proteins and carbohydrates in the form of sizing, paste or starch and other organic substances attractive to insects. The nature and extent of the damage depends not only on the insect and material but also on how promptly the infestation is discovered and controlled. Damage may vary from a few holes to complete destruction. The most common types of insects that attack paper are: Termites, Silverfish, Cockroaches, Booklice, Bookworm or Book Beetles. Olubanke (2010) submitted that paper identifies moulds as the most important biodeteriorating agents of library materials. In addition to destroying, disfiguring and staining books, the moulds have been linked to numerous adverse human health effects that fall into three categories: allergic, toxic and infectious. The other biological agents include bacteria, insects and rodents. The important insects in tropical environment are cockroaches and termites.

Human factor: Nzotta and Folade (1982) consider it as a situation where users poorly handle the library resources. This could result in tear and mutilation of library resources. Heavily used materials deteriorate fast and some users soil books with oil and ink, they could also leave pencil or biro inside a closed book, enclosed one side another and steal the book. Afolabi (1990) identified those factors influencing theft and mutilation among the library users and staff in Nigerian libraries. They include inadequate service staff on nights and weekends, lack of multiple copies for high demanded items in the library, inadequate photocopy facilities and services, difficulties associated with the use of reserve systems, nonfunctioning facilities and infrastructures, etc. He then concluded that book theft in libraries should not be attributed only to library factors but other factors

such as economic, social, political, and environmental that strongly influences book theft and mutilations.

Deterioration of library materials caused by natural elements, such as temperature and humidity extremes, light, air-born pollutants, mold and pests, is usually gradual and cumulative, and is always irreversible. Some library materials deteriorate more quickly than others because they are made from materials that are inherently unstable, such as acidic paper. Natural disasters, such as floods, fires, as well as building problems, such as leaking roofs or dysfunctional HVAC systems, may cause more immediate deterioration. The materials of which library and archive collections are composed, namely paper, parchment, palm leaves, birch bark, leather and adhesives used in bookbinding, are susceptible to two main forms of deterioration. One is biological deterioration caused by insect attack and/or fungal growth, and the other form of deterioration is caused by adverse environmental conditions such as extremes of dampness or wide fluctuations in relative humidity associated with large variations in day and night temperatures, light and atmospheric pollutants. These two forms of deterioration are interconnected because humid conditions favor the growth of fungi and accumulations of dust and dirt will attract insects (Maravilla, 2008).

2.5 Preservation and Conservation Measures and Practices among

Academic Libraries

Sound preservation and conservation programmes are multifaceted. As Chapman (1990) outlined, the starting point of conservation programmes is the creation of a policy document specifying, among other things:

- Preventive measure to minimize deterioration in storage and handling
- Staff and user training programmes.
- Housekeeping routines to clean, protect, and extend the life of materials.
- Security measure and contingency plan for disaster control and recovery.
- Substitution programmes.
- Conservation treatment for repair of damaged originals.
- Procedures for exhibitions and loans.

It is doubtful that many Nigerian academic libraries have such policy documents. Alegbeleye (1993) stated that “better storage conditions for books and other library materials, establishment of conservation policies in academic libraries, as well as the recruitment of preservation librarians would bring about a better conservation effect in the African scene.” Senapti and Nagta (1996) identified the need for preventive measures in conservation and preservation of library materials and records. These includes proper housing of documents, protection against heat, humidity, light, air pollution, dust, insects, fungi, fire, water, and mishandling. They suggest inclusion of conservation and preservation in library education and training. Alegbeleye cited in Ovowoh, and Iwhiwhu (2010), advocated a preventive conservation and preservation approach in African countries, which should focus on improving the environment, controlling light, temperature, humidity, and pollution. According to Jeyrai, cited in Mahmood, and Mari (2013), if the air pollution is controlled, there will not be any external acidity in paper materials. One of the best ways of controlling pollutants is filtering of the air intake in to storage areas, which can be attained by air conditioning system operating for 24 hours throughout the year. Without this facility simple measure like wrapping the books and

manuscripts in cloth or placing them in book containers reduces the effects of pollution to a great extent. Proper care should be taken to save books and documents from dust. It is preferable to use vacuum cleaner and fine brushes for dusting of shelves and books.

Kroon (1997) is of the view that “all libraries need to preserve and conserve their collections against deterioration from a variety of sources including chemical, biological etc. According to Swan cited in Ovowoh, and Iwhiwhu, (2010) discusses preservation of photographs, and advises librarians, archivists, and curators on the care of photographic collections, including environmental control and proper preparation of materials for handling.

Elaturoti (1990) identified dust, water, and insects as the factors that affect non-book materials. He recommends that they be cleaned regularly to remove dust, kept away from water, which can cause the materials to corrode, and kept away from insects. Osifoh (1997) identified dampness, poor ventilation, which can cause mould and fungi attacks on documents, high temperature and humidity, aerosols and noxious gases from polluted air, insect and rodent infestations, as enemies of non-print materials. Electronic or electric machinery can be an enemy to magnetic tape, because they may generate magnetic currents. He recommends that magnetic tapes be stored in cardboard or inert plastic and be rewound at least once a year.

According to Agarwal and Mandana, (1997), there are certain dos and don'ts which the library staff and users should follow to increase the longevity of the library resources. These are among others:

- a. Important books and manuscripts should be kept in specially prepared containers.
- b. To carry large number of books, trolleys should be used. Utmost care should be taken while transporting rare, valuable and delicate books.
- c. Care should be taken while photocopying the books as at that time considerable stress is imposed on the material and the bindings suffer most and also the spine can be damaged.
- d. Use bookends to support books when shelves are not full. Books should not be shelved too tightly or too closely.
- e. It must be always ensured while opening the books, pages are not torn or covers are not damaged.
- f. Books should not be left open on the reading table, face downwards.
- g. Never allow a book to stand on its fore edge.

The processes of preservation, conservation and restoration are applied to safeguard the library materials from further decay and deterioration. Preservation is the process in which all actions are taken to check and retard deterioration whereas conservation includes proper diagnosis of the decayed material, timely curative treatment and appropriate prevention from further decay.

Libraries in the ancient period were mainly concerned with preservation of their resources rather than open their collections for public use. The earliest libraries based their preservation and conservation mainly on effective storage. Edoka and Igbino (1993) observed that those materials are kept in dark places, windowless rooms, in the interior of houses to act as storage areas.

Harvey (1993) recommended the use of good shelves and control of insects using such things as cedar-wood and insecticide, pesticide and fumigant to destroy the problems of insects and enhance good storage. He stated that for improved storage area, total prohibition of food items, daily cleaning of floors and dusting of books and shelves are necessary.

Academic libraries must ensure the longevity of their collections by improving storage environment. Alegbeleye in Adeleke, Aina, and Lateef, (2011) opined that library materials should be stored in an environment that has controlled temperature and humidity. Libraries should use air-conditioner, humidifiers and other facilities to keep the environment at appropriate level. Ekoja and Pisadih (1996) observe that most of the libraries use functional fans, air-conditionals to allow free-flow of air, because librarians are aware that a well regulated temperature and relative humidity are good for the health of library materials. Many academic libraries have been preserving their information materials by strictly adhering to the ethics of careful handling, library staff and users are taught how to handle information resources decently. Careful which connotes respect for the materials increases their life span. Everyone is responsible to handle library materials carefully to safeguard library materials for future users. Mishandling affects the physical operation of a book. Library materials are available for use by all students and staff. It is important that library users be aware that there are certain ways that they can use these materials so as to prolong their shelf life.

There are several things we can do to help care for the libraries materials. This are:

- We should handle library materials with clean, dry hands and have a clean area to use the book. We should remember that whatever is on our hands (dirt, food residue, lotions) will be on the book once we have handled it. Fingerprints are often indelible.
- Never pull a head cap of a book when taken it from the shelf.
- Removing the book from the shelf by gripping on both sides of the spine at the middle of the book instead of tugging at the top of the spine.
- We should support book spines and covers when holding books open.
- We should use bookmarks that are thin, clean, non-acidic, and will not damage or distort bindings
- We should not mark or highlight library materials. We should not mark books with pens, pencils, or high-lighters, since all three will erode the paper over time. When taking notes near books, it's safest to use a pencil, since an accidental pencil mark in the book can be more easily removed than ink.
- We should not force a book to lie open to 180 degrees; instead, prop up the covers of an opened book to decrease the opening angle. Support the book while reading so the pages are not forced open any further than necessary to read. Open new books carefully and slowly. Do not force them to open too far.

- Photocopy gently. Avoid pressing a book flat when photocopying, again to prevent damaging the spine which structurally holds the book together. When photocopying book pages, take care not to wrinkle or crumple pages. If a book is bound so that it resists being pressed flat, don't force it – settle for a less than perfect image of the page you are copying.
- We should not expose library materials to water, which can cause deformation and staining
- We should avoid eating and drinking near library materials. Food attracts paper-eating insects, and spills cause permanent stains as well as encouraging the growth of mildew. Drink, food, and smoke are all bad for books.

Binding as a preservation conservation practice, academic libraries have binderies responsible for the rebinding of torn and worn-out library materials, supplemented by student projects and assistance from others in the university community (Mazikana, 1993). Books and journals require binding to withstand the rigours of library use. Mazikana (1993) stressed the need for a combination of facilities and maintenance procedures that are conducive to longevity of information resources. In-house repairs we should ensure that the library has complete control over its bibliographic resources. The bindery could also be very instrumental in binding back issues of newspapers and journals to facilitate a relatively easier storage, retrieval and dissemination of information. Recognizing the limitations of time and resources, books must be selected and prioritized within the constraints of the University Libraries (Ngulube, 2003).

Photocopying as a preservation practice, Ojo-Igbinoba (1993) observed that most libraries in Africa substituted photocopies of restricted materials. A lot of photocopying is done in the libraries to reduce usage of the restricted original materials as a preservation measure. It is also possible that a lot of photocopying of parts of library materials is done for research purposes at a fee; however, this is done in-line with copyright rules and regulations that allow photocopying for strictly educational purposes. Photocopying is therefore used to prolong the lifespan of the library collection. However, Ngulube (2003) noted that photocopies lack permanence if they are not done on acid-free paper. Therefore, this operation needs to be handled with care.

According to Jantz and Giarlo (2005), digital preservation has been defined as the managed activities necessary for the long- term maintenance of a byte stream (including metadata) sufficient to reproduce a suitable facsimile of the original document and for the continued accessibility of the document contents through time and changing technology. Digitization as a method of preservation is a global phenomenon and the new trend in managing library materials and contents, especially precious ones. Jantz and Giarlo (2005) pointed out that digital technology could revolutionize how university libraries capture, store, preserve, and access information. From a preservation perspective, digitization solves the traditional library problems like conservation, preservation, storage and space. It provides wider access to information to different users. Ngulube (2003) argued that digital technology's capability to create a higher quality reproduction of a deteriorating original, the ability to reproduce digital images over and over again with no loss of image quality, greater flexibility in terms of output and distribution, and potential cost savings associated with storage offers unprecedented opportunities for access and

use. Although the advantages of digital technology for preservation reformatting and access enhancement were numerous, there were drawbacks as well (Jantz and Giarlo, 2005). These centred on the obsolescence associated with the rapid changes occurring in the development of hardware/software system design, a lack of experience on the part of institutions. Digital resources can be stored on any medium that can represent their binary digits or bits, such as a CD-ROM or a DVD. If the digital medium deteriorates or becomes obsolete before the digital information has been copied into another medium, the data will be lost. Digital preservation involves copying the digital information into newer media before the old media becomes obsolete. Therefore, until the concerns associated with maintaining long-term accessibility to material stored in digital image form can be resolved, many libraries and archives are loath to initiate digital projects beyond the pilot phase (Lee et al., 2002).

Another preservative practice for protection of library information resources and information in them is microfilming. This is a means of preservation called reformatting, is the process that involves photographing information materials onto reels of film at high reduction factors, requiring a special reader to use. The term 'microfilm' (according to Ngulube, 2003) describes film that is used to store by photographic means and at greatly reduced size, facsimile images of a great number of original items, documents, pages of books, and so on. According to Ngulube (2003) microfilming may have its limitations, but it is still the appropriate solution in low-income countries such as Nigeria. He added that microfilming, while not perfect, has proven to be the effective technology for rescuing brittle paper and for facilitating access to endangered research materials.

Belinger (1993) extolled it as one of the best preservation practice since its stability and storage requirement ensure access for the future.

Other modern means of preserving library resource is lamination. This according to Unomah (1985) is the means of using cellulose acetate to reinforce brittle and be-acidified paper materials. Two types of lamination are in use. These are the classical or orthodox. It is also called cold lamination and has to do with the sandwiching of the damaged paper in between two transparent acetate films and pressing it with hot iron. This method is highly efficient but very expensive. According to Unomah, the expensive nature of this led to the invention of barrow lamination machines which are found in almost all the libraries. Lamination has been confirmed by Harvey (1993) and Igbinoba (1993) to be of great significant as far as paper materials preservation is concerned. It gives strength and durability from acid paper, flood and disaster affected materials.

The use of closed access as a preservation practice in vogue in many academic libraries, Edem (1998) recommends a partial but closed access for volumes that are liable to attack. Here, not every student is allowed access into this area. The areas involved are usually the Reference section and the special collection division. People are partially allowed into this closed access to ensure careful and restricted handling.

Keeping the library staff and the users properly aware of the why preservation role against deterioration is a good practice obtained in many libraries. Many librarians do not have adequate information concerning preservation. This agrees with Rotcliffe (1987) observation that not all librarians are yet persuaded that there is crisis that the heritage of the printed word is now at risk. Educating librarians on the what, how, when and why preservation is now widely acclaimed and carried out in many places. Buttressing the

importance and relevance of awareness in preservation activities, According to Sylvester cited Okikiri (2012), affirmed that a publicity programme designed to increase the awareness of the problems, solutions and preventive measures of preservation must be undertaken. Libraries ought to educate their staff through workshops seminars, conferences, in service training etc. According to Sylvester cited Okikiri (2012), libraries up-date and enhance the knowledge of preservation of their staff by publicizing the 'do's and don'ts of careering for library collection like proper handling of materials, etc. the libraries through awareness creation educate also the users. This is done through orientation programmes and general study classes. Lecturers appeal to the consciences of the users by presenting damage materials and telling the students how the library and the future users will suffer for the act. For the programme to succeed it is essential that more people become aware of the significance of documentary heritage and of the need to preserve it. Potential donors are often unaware of the importance and value of documentary heritage.

Another preservation practice currently in use in most academic libraries is the acquisition of good quality information resources. For this to be upheld, each library ought to have good acquisition policy that advocate for high quality materials to enhance preservation. According to Falode cited in Okikiri (2012), preservation programme start with the selection for acquisition of materials printed in durable paper.

2.6 Preservation and Conservation Challenges in Academic Libraries in Nigeria

Preservation and conservation challenges are enormous. For instance, Rosenberg (1993) has a strong conviction that, everyday care of library books should be given a special emphasis in preservation measures, taken by libraries and information centres. This

conviction is derived from the fact that the quality of care and handling ultimately contributes to the longevity of the book. The problem of preservation and conservation has been on, since time immemorial. Nzotta (1982) rightly said that the problem of deterioration and preservation of information materials is not a recent phenomenon. He asserted that it has been in existence since books were invented and libraries were first established. Rosenberg (1993) also notes that everything in library collections is deteriorating today, was deteriorated yesterday, and will continue to deteriorate tomorrow, although there is a need to retard the process.

Alegbeleye in Adeleke, Okusaga and Lateef (2011) study on the practice of conservation of information materials concludes that there was a lack of technical expertise; Librarians were not well informed about preservation and repair of these materials and for any programme to succeed, there is need to have trained manpower. Conservation and preservation is a specialized field that requires staff that understands the chemical nature of the materials in their custody.

Another great challenge in successful preservation and conservation is the absence of manpower and other infrastructure. For any preservation and conservation programme to succeed in academic libraries there must be adequate and well-trained manpower (Ngulube, 2002). This is because, preservation and conservation of information resources is a specialized field of knowledge that requires information professionals who understand the physical and chemical nature of the materials in their library and archive holdings. Popoola (2003) advocated the need to expose librarians and archivists to conservation and restoration practices during their training. Akussah (1991) suggested that such training programme should include, operating environmental control, storage

and housing, operating environmental systems, designing new buildings or renovation of buildings.

Africa has not been able to train students adequately in the area of conservation and restoration of information resources due to lack of functional laboratories where students could undergo practical works. Added to this is the problem of inappropriate buildings, poor power supply and water supply that posed great threat to preservation and conservation of information resources in African countries (Kemoni and Wamukdya, 2000). Sylvester in Okikiri (2012) maintained that the most critical issue facing preservation efforts is the lack of properly trained personnel. He called for an urgent provision of skilled and professional librarians duly trained for preservation activities in academic libraries.

Also, most African countries do not have a national information policy which makes the formulation of preservation and conservation policies in the libraries and information centers out of the question (Wamukoya and Mutula, 2005). Kemoni (1996) reviewed the conservation programmes of archive materials in Kenya and found that the conservation departments did not have a disaster control plan. The absence of such a plan means that in the event of a disaster, they would not be in a position to respond to the disaster with the urgency that is required.

Smith (1987) stated that the library users and staff do not have a genuine concern for the physical survival of library materials and therefore, handle them without care. Harvey (1993) and Ogunmilade (1996) believed that damage to books are caused by such rough handling like throwing books during disputes or play, dropping books over a short

distance, mutilations inserting thick objects to locate the reference pages, ripping off some pages and opening with moistened fingers etc. Therefore, poor handling is one of the major problems of library preservation.

Poor storage constitutes great impediments to a successful preservation. This fact has been confirmed by Shahani and Wilson (1987) as they asserted that the longevity of any paper depends greatly on the type of materials used in making it and the environment in which it is stored. The environment here has to do with temperature, humidity level, ventilation system and even, the shelves within. Poor environment, therefore, incorporates uncontrolled temperature and relative humidity, poor ventilation and inadequate shelves. They all accelerate the rate of deterioration of library collections.

Poor security measures also stand on the way of effective preservation. Unomah (1985) observed that theft in academic libraries has deprived many libraries in Nigeria valuable collections, and that there is a sharp rise of theft in the recent years. Academic libraries are known to be the worst hit since students circumvent all valuable security systems, the greater the access to the library materials, the higher the threats of theft, water, mutilation and other misuse.

Inadequate finance is another problem because almost all academic libraries do not allocate adequate funds in their annual budget for the preservation and conservation of information materials in their holdings. This has really caused the low priority or lack of desired attention given to the preservation and conservation of information resources by the library management. Mowat in Mustapha, Usman and Firdausi (2013) observed that preservation involves a huge cost whether it is in term of maintaining conducive

environment, restoring already damaged work or suitable treatment of injured works to ensure their continuous preservation. Akussah (1991) explained that government has been more interested in resuscitating their ailing industries than engaging in the buying of preservation facilities. Ngulube (2002) hit the nail on the head when he said that, lack of care, due to inadequate financial resources fights preservation and enhances deterioration.

Inadequacy of equipment/Materials contributes significantly to the present poor status of preservation and conservation of information materials in African libraries, archives and information centers. Some of the essential materials and equipment required for setting up functional conservation and restoration laboratories in African libraries and archives are not available locally (Esarbica, 2002).

Another problem is the quality of paper and ink. The low quality of paper and ink used in the production of information materials especially library book materials and paper-based records in archives and records offices pose serious danger to preservation and conservation of information materials in African countries (Popoola, 2003; Mahapatra and Chakraharti, 2003). Shahani and Wilson (1987) asserted that whether a sheet of paper lasts indefinitely depends significantly on the material used in its manufacture. Increased demand for paper and shortage of paper fibre forced the manufacturer to use inferior materials that drag in excess acid into the paper. Acid in paper appears to be the greatest cause of deterioration and therefore, one of the greatest, problems of preservation. Moreover, when such a paper becomes yellow and brittle it cannot be reversed to the original standard. Agreeing with this, Mowat in Mustapha, Usman, and Firdausi (2013)

asserts that even in ideal conditions, the acid in paper is a major threat and this threat is of greater dimension in modern books which form the bulk of almost all academic libraries.

Administrative problem is another threat to the preservation and conservation of library resources. Majority of the library and archive managers concentrate much on the effective provision of information services to users. There is a lack of proper recognition of the need for preservation, conservation and restoration of information resources. They have failed to realize that preservation and conservation staff for improved job performance by providing good conditions of service (Popoola, 2003; Olatokun, 2008).

Tropical climate is also contributed to the present poor preservation and conservation of information resources. The effects of tropical climate of excessive temperature, high relative humidity, dust, and rodents that feed on paper-based materials cause rapid deterioration and decay of information resources in Nigeria libraries and archives. These agents of rapid deterioration and decay of information materials add more to the costs associated with conservation and restoration of information materials in African libraries, archives and records offices (UNESCO, 2000). Mwiyeriwa (1998) while stressing the great need for a well-established document repair and conservation units in Africa observed that with the exception of air, fungi, insect, and pest are more pronounced in the continent than elsewhere.

Lack of disaster control plan is another problem confronting preservation and conservation of information resource. A disaster plan is an important tool in any organization. The absence of such a plan implies that in the event of a disaster occurring, an information centre would not be in a position to respond to the disaster with the

urgency that is required. Alegbeleye (1996) argued that libraries are prone to disasters that can be classified broadly as natural and man-made and they include fire, flooding, vandalism, civil unrest, earthquakes, volcanic eruptions, war, lightening and to some extent rodents.

The lack of commitment to preservation of information resources in libraries has been hinged on many factors. Darling (1981) cited in Akussah (2006) to have asserted that ‘financial constraints are serious and will become more so; but until the preservation field searches the point at which most people know what ought to be done, the lack of money to do it on a scale appropriate to the need is not terribly significant’. This submission attests to the fact that knowledge plays a key role in preservation practices. In the same vein, Ngulube (2005) is of the view that the real impediment to having viable preservation programmes is not entirely resources-based, but lack of preservation knowledge.

2.7 Theoretical and Conceptual Framework

The study used Operational Conservation Theory as its primary theoretical understanding on the perception of preservation and conservation practices of library and information resources in tertiary institution in Kebbi State. The model is well known for predicting and explaining ways through which library and information resources can be preserved.

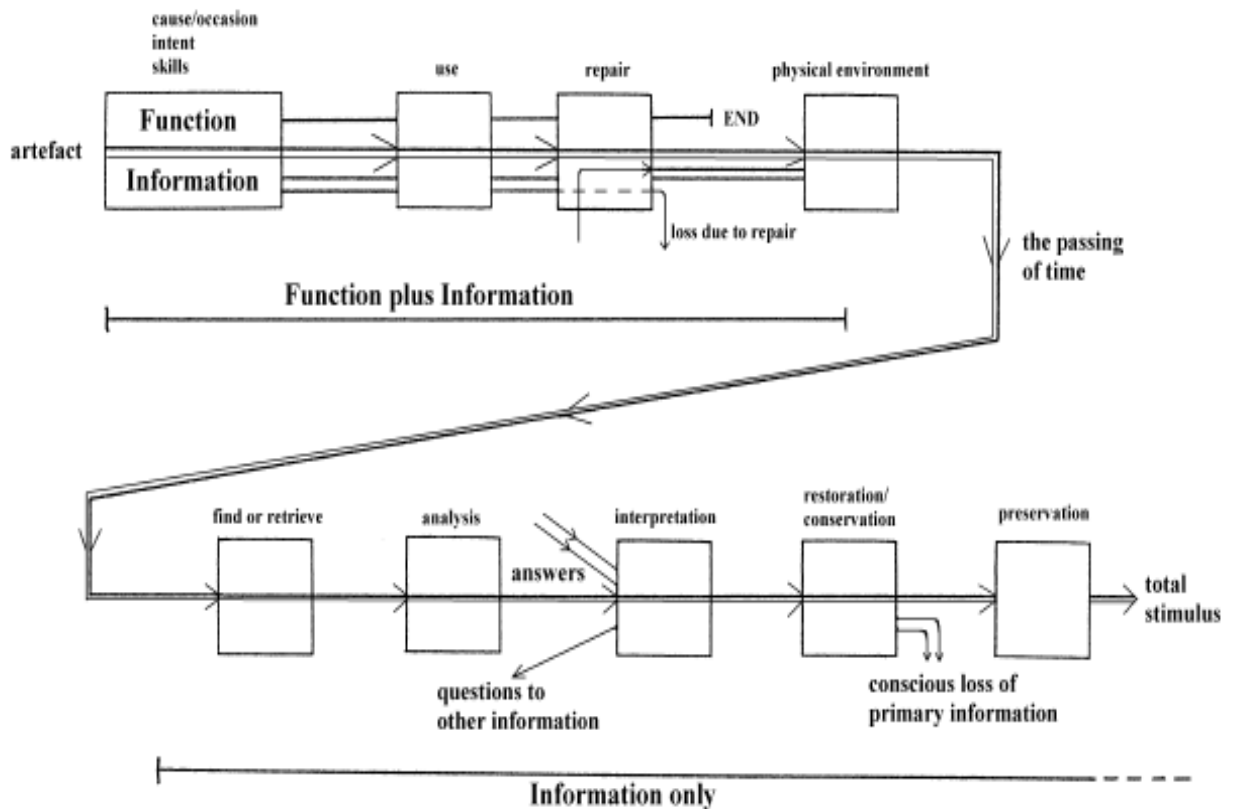
The justification for using the model (operational conservation theory) it is based firmly on the structure of information present in any object (even a landscape) in the form of visible and latent information. Also the model explains how building, sculpture, painting, print books, natural history object, musical instrument, artifact from technology,

photographic materials, moving images can be preserved and restored in libraries. (Nannestad 2000).

Operational Conservation Theory

The basis for operational conservation theory is that all objects or artifacts which surround us contain information of various kinds. Obviously, these artifacts were not all made just to provide information, but many perhaps most were made to have a function or useful purpose. When their function worn out they may be repaired, thereby regaining their function, but this does not change the information. (Brock-Nannestad, 2000). The development of information in an artifact from origin to preserved item, the term life cycle is nowadays mainly used in relation to the ecological load on our environment due to manufacture and use of product. Von der Lippe (2000) used the term “Object Cycle” for the cycle of transfer of an artifact from raw material via function and back to raw material upon total deterioration.

Fig. 1 Operational Conservation Theory



The Strength of the Model

The model gives emphasis on all information resource: print or audio-visual resources, the visible and invisible information resources. Preservation of cultural heritage is on approach which permits those responsible for decision to identify the Consequence of any cause of action contemplated. The consequence are related to the degree to which the preserved item. (from the highly specialized artifact to landscapes) function as intended and the item capacity for providing human input. Ashton and Halleam (1990) expanding

on a proposal by James Burnam, looked at a part of the life cycle, namely that part during which repair is economically advantageous.

The application of the operational conservation theory (OCT) make artifact and other information object remain valuable. According to Brock-Nannestad (2013) the object is available to answer questions at any time in the future it must be stored or preserved, this latter term relating to dedicated storage conditions. As a minimum, the object will be entered in a ledger where the location of the object is combined with text, marking, or numerals identifying it. If we believe that the object will not survive to a sufficient standard in such storage conditions it has to be subjected to a treatment of conservation. If we believe that the object has lost so much information that in future it will not even provide the information that we may now extract from it, it is subjected to restoration. In addition the component of the model is related to the variable of the research

The Weakness of the Model

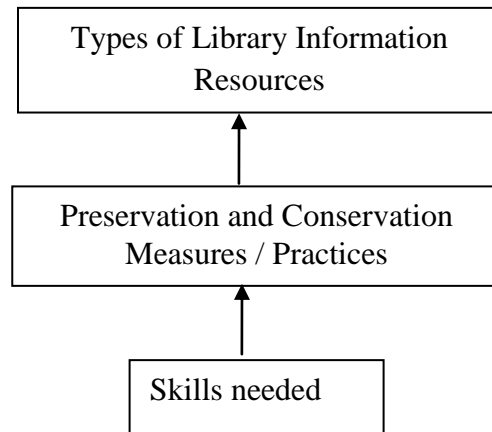
One major weakness of Operational Conservation Theory (OCT) is that it gives much emphasis on artifact in libraries, while books and other library resource are not been given much consideration.

2.7.1 Conceptual Framework

Based on the analysis of some research findings, several factors have been served to affect library resources. The researcher, therefore, will build upon operational conservation theory as a technique of preservation and conservation of library resources, preservation and conservation measure analysis are some of the techniques for preservation and conservation of library resource in tertiary institutions. Therefore, there

is need for librarians and information workers to find or retrieve analyses and interpret information resources in their libraries.

Fig. 2: Conceptual Framework



**Model of Preservation and Conservation Practices of Information Resources in
Libraries of Tertiary Institutions in Kebbi State.**

The concept preservation refers to all necessary strategies, measure and step invested into prolonging the life of library information resources. According to Lasisi (1999), preservation is used to denote all the activities and measures intended at conserving library materials for posterity. Conservation on the other hand is regarded as an act of preserving, protecting and shielding materials from destructives influences that shorten their life span. The term conservation is defined by the IFLA principle for the care and handling of library materials (2010) as practices taken to slow down deterioration and prolong the life span of object by direct intervening in its physical or chemical make - up. Alegbeleye (1993) stated that the techniques of preserving and conserving library resources can be better storage conditions for books and other library materials,

establishment of conservation policies in libraries as well as the recruitment of preservation librarians would bring about a better conservation effect in the African scene, other techniques are preventive measure to minimizes deterioration in storage and handling. Staff and users training programme, housekeeping routine to clean, protect and extend the life of materials. Security measures and planning for disaster control and recovery, substitution programme and conservation treatment for repair of damaged materials.

Nagta (1996) identified the need for preventive measures in conservation and preservation of library materials and records. These includes proper housing of documents, protection against heat, humidity, light, air pollution, dust, insects, fungi, fire, water, and mishandling. They suggest inclusion of conservation and preservation in library education and training. Alegbeleye in Ogunsola and Daniel (2016) advocated a preventive conservation and preservation approach in African countries, which should focus on improving the environment, controlling light, temperature, humidity, and pollution. Factors responsible for preservation and conservation practices in libraries includes: students are not adequately trained in the area of conservation and restoration of information resource due to lack of functional laboratories where students could undergo practical works, lack of national policy which makes the formulation of preservation and conservation in the libraries and information centers out of the questions.

Also, library users and staff do not have genuine concern for the physical survival of library materials and therefore, handle them without care. Ogunmilade (1996) believed that damage to books are caused by such rough handling like throwing books during

disputes or play, dropping books over a short distance, mutilations inserting thick objects to locate the reference pages. Poor security measures also stand on the way of effective preservation. Lastly, inadequate finance is another major problem because almost all academic libraries do not allocate adequate fund in their annual budget for the preservation and conservation of information materials in their holdings.

2.8 Review of Related Empirical Studies

This section reviewed empirical studies carried out on preservation and conservation of library information resources.

Ozioko (2014) carried out a study on preservation and conservation of Library Resources in Federal University Libraries in South –East of Nigeria. His findings revealed that different types of preservation and conservation practices were available, although not well implemented in some library studied; that while some of the preservation and conservation practices were practiced to a greater extent some were at very low extent and others were not practiced at all; that the problems associated with preservation and conservation of library resources in libraries studied ranged from: inadequate infrastructure, frequent power failure, inadequate funding of the library, etc., and that, for the enhancement of preservation and conservation of library resources among libraries in Federal Universities in South-East Zone, Nigeria, there is need for adoption and implementation of strategies such as regular power supply, proper clearing and dusting of library materials, proper shelving of books to allow free flow of air, Handling library

materials carefully, Regular education of library users, adequate infrastructure, and Regular fumigation of the library should be improved upon etc.

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.

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.

Ezani and Ezema (2009) examined the digital preservation of the University of Nigeria's institutional repository. The study brought out the major issues and current status of the work through the first hand experience of members involved in the initiative. Six research questions were used to guide the study. A twenty item questionnaire was distributed to

the respondents who comprised of the total population of both librarians and the technical staff, mainly from the university's department of management and information system (MIS), directly involved in the project. The findings shows that the librarians who were involved in the project do not fully possess the skills needed for the work especially in the skills dealing with book marking restoration of the scanned documents. The study recommends more training for library staff, procurement of more state of the art equipment, inclusion of digitalization skills in the library and information science curriculum, the continuation of synergy between the library and MIS in terms of resource sharing and technical support. The study proposes that since digitalization encourages the development of local contents and sharing of digital resources among libraries within the country and beyond. The study stresses that; Nigerian libraries should adopt this initiative for the preservation of their institutions heritage resources.

Fadeham (2009) on the other hand, examined the preservation and conservation of newspapers

in Nigerian university libraries. Five federal university libraries in South-Western Nigerian

universities were surveyed. He compared their preservation and conservation procedures with that of international practices. The instrument used for data collection was a structured questionnaire and an interview. The findings of the study revealed that the poor storage facilities (housing, storage environment) lack of bibliographic control, absence of skilled staff and training in preservation and conservation, lack of content indexing of papers (either in clippings or page by page), lack of full understanding of the concept of preservation and conservation no sign of reformatting techniques (except in

one of the libraries) and obvious deterioration of resources. He therefore recommended that awareness of all these things that the university libraries lack should be created in the libraries. He also noted that the magnitude of the problem is high and requires a generic solution in all the university libraries and other related information agencies in Nigeria.

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 policies. 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.

Sule and Adamu (2005) carried out a survey on the impact of preservation and conservation of library resources. A case study of Francis Sulemanu Idachaba library (FSIL), University of Agriculture Makurdi in Benue State was used. The study examined the major root causes of deterioration of library materials from the internal factors to the extent as well as the biological factors that facilitate the deterioration of library materials. The result of

the study indicates that the library has been making efforts to fight against all the agents of deterioration of library materials and revealed that it is a continuous one.

Ugwuanyi (2004) examined the preservation of traditional library materials in academic libraries in Enugu State. She used descriptive survey research design in the study.

The population of the study comprises of five academic libraries in Enugu State. A structured questionnaire with 12 items which answered the 4 research questions was used. The study tried to find out the current preservation practices of academic libraries in Enugu State, the problems associated with these practices, the perceived preservation needs and the strategies for improved preservation needs and the strategies for improved preservation. The findings of the study showed that many preservation practices are in use in these libraries. However, some of the problems militating against the operational efficiency of these practices that she found out are poor handling practices, lack of preservation personnel, poor quality paper, poor environmental storage facilities and inadequate finding. She noted that storage needs bindery services as well as personnel needs are needed in the library. She then recommended that there should be an establishment of preservation policy co-operative, better finding of academic libraries in the state as well as disaster preparedness for improvement.

Azuzu (2000) had a study on disaster preparedness in academic libraries in Enugu and Anambra State. The study was based on three research questions which sought to identify the causes of disaster in academic libraries, the measures used by the academic libraries in preventing the occurrence of these disasters in their libraries as well as the measures

that academic libraries use to cope with disaster if it occurred. Nine academic libraries in Enugu and Anambra state were surveyed. The instrument for data collection was a questionnaire which was administered to nine university and college libraries in Enugu and Anambra state. The findings showed that most of the libraries studied were not very ready to cope with disaster since most of the libraries did not have any comprehensive disaster plan, and not also inform disaster reaction teams or collaborate with essential service department. Azuzu, recommended intensified surveillance of reading areas and calls that library administrators should ensure that libraries should have comprehensive disaster plans in collaboration between the libraries and essential services like fire services and telephone services.

Obokoh (1996) examined the patterns of disciplinary strategies used in dealing with cases of books, journals, theft, mutilation in Nigeria University libraries surveyed twenty university libraries that received the World Bank project books to deal with books, journals, theft, and mutilation. A questionnaire was used to collect data. The questionnaire was sent to the twenty university libraries out of which sixteen were returned with the questionnaires duly completed. The result showed that there is lack of standardization or uniformity in the application of the various disciplinary strategies aimed at safeguarding the new books and as such the various strategies are not yielding any serious result in preventing the books from being stolen or mutilated.

To this end, the reviewed empirical studies in this research were on preservation and conservation of library resources in tertiary institutions. Therefore, the only gap left over for this research to fill was that none of them was carried out on preservation and conservation

of library resources in tertiary institutions libraries in Kebbi state. Thus, this makes the present research a unique one

2.9 Summary of the Review and Uniqueness of the study

Summary and literature review for effective coverage of the related available literature in this section were highlighted, the review was stratified into eight sub-heading thus: Concept and significance of library information resources, concept and significance of preservation and conservation in academic libraries, factors responsible for the destruction or deterioration of information resources, preservation and conservation measures and practices among academic libraries, challenges affecting effective preservation and conservation practices in academic libraries in Nigeria, theoretical framework / conceptual framework, review of related empirical study, summary of the review and uniqueness of the study.

The concept and significance of library information resources were reviewed. The issues of preservation and conservation practices of library information resource and its significance had attracted the attention of writers and scholars which includes among other Moses and Popoola (2011), Popoola and Haliso (2009), Fayose (2000), Usoro, (2007) etc.

Another concept discussed was concept of preservation and conservation in academic libraries on issues such as definition, significance, factors responsible for deterioration of library resources, preservation and conservation measures, preservation and challenges affecting effective preservation and conservation practices in academic libraries in Nigeria. These areas were covered by the work of (Alegbeleye, 2002) Jordan (2003),

Edem and Feather (1997), Muhammad (2006), Mahmood, and Mari (2013), Kroon (1997), Ovowoh, and Iwhiwhu, (2010), Jantz and Giarlo (2005), Falode as cited in Okikiri (2012) among others.

Edem and Feather (1997) in a study carried out on preservation and conservation arrives at the conclusion that preservation is a cord that runs through the activities of a library. Preservation includes all the protection, maintenance and restoration of information materials. The review revealed that many librarians in Nigeria and other countries that we owe as much responsibility to the future generation as we owe to our present clientele. In view of limited financial resources, much emphasis should be placed on the preservation of collections to the same extent as we are concerned with acquisition and service to clients. Okegbola (1997) wrote on the importance of preservation and noted that, aside from the historical and artistic values, the global economy is on the downward trend and developing countries such as Nigeria is adversely affected. Thus, replacement of destroyed materials becomes extremely difficult.

Various materials were consulted during the review. Among which are journals, books and retrospective thesis. Most of the authors whose studies were reviewed took much more interest in discussing the conceptual approach, practices and problems of preservation. The reviewed empirical studies on preservation and conservation of library resources in tertiary institutions left a gap for this research to fill. The gap was that, non on tertiary institutions libraries in Kebbi state. Thus, this makes the present research a unique one. This study therefore is also unique with the previously conducted studies in terms of research design, population and sample, sampling technique adopted, research instruments and method of data analysis. That is the reason why the researcher developed

interest in studying preservation and conservation practices of information resources in libraries of tertiary institutions of Kebbi state.

Moreover, it is hoped that, the study would stimulate the initiation of in-service training programmes at the tertiary institutions libraries studied, for library staff and library administrators in order to effectively participate in the day-to-day care of their library collections (information resources). Scholars, researchers and others who are interested in the area will also find the study and its report valuable. In addition, the study would add to the existing literature in the area.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This portion presents the methodology used in the study, and specifically it dealt with research design, preliminary study, population of the study, sampling techniques and sample size, it also dealt with instrument for data collection, ensuring trustworthiness of the qualitative data, administration of research instrument together with data analysis techniques.

The present study adopted the use of qualitative research method. Qualitative research method, according to Gay (2006) “collects non-numeric data in order to gain insight into the phenomenon of interest. It aimed at gaining a deep understanding of a specific organization or event, rather than surface description of a large sample of a population’. However, this method is adopted in this study to collect non-numerical data in order to gain insight into the phenomenon of preservation and conservation practices of library and information resources, using operational conservation theory. This is because; interview and observation techniques were used to collect data. However, it has helped to investigate preservation and conservation practices in Kebbi State tertiary institution’s libraries. The qualitative method was chosen because of the nature of the research and that has fewer numbers of people in respondents.

3.2 Research Design

Narrative based design is considered appropriate for this study because, narrative based design according to Czarniawska (2004), is the procedures for conducting research

within the context of qualitative mode of inquiry which involved focusing and studying one or two individuals, gathering data through the collection of their stories, reporting individual experiences and chronologically ordering the meaning of those experiences. On the importance of narrative based design, Qureshi (2005) established that “The approach is holistic and dynamic in nature, as against the pre-decided set of parameters in quantitative research, and provides comprehensive patterns emerging from detailed and unstructured elicitation of information.” These and many more reasons made it desirable for the present study.

3.3 Preliminary Survey and its Findings

As a prelude to the main study, the researcher carried out a preliminary survey in the areas of study which was conducted. The preliminary survey was conducted between 18th - 25th January, 2016 by the researcher. The purpose of the preliminary survey was to specifically gather relevant information regarding the number of the library professionals and non-professional staff available in the library, together with how preservation and conservation practices of library resources by libraries in tertiary institutions under study was done.

Questionnaires were administered by the researcher to the chief librarian of tertiary institutions under study, in order to get relevant information. The purpose was to determine the sample size of respondents for the main study.

Results of Preliminary Study

The result of the preliminary survey is hereby tabulated under table below

Table 3.1: Results of Preliminary Study

S / No	Name of Tertiary Institutions	Year of Establishment	Location	Preservation and Conservation Practices	Number of Professionals	Number of Non-professionals
1.	Kebbi State Federal University	2014	Kalgo	Rebinding, lamination, digitization, dusting, window-cutting, fumigation, photocopying and library orientation.	4	5
2.	Kebbi State University of Science and Technology	2006	Aliero	Rebinding, lamination, digitization, dusting, window-cutting, fumigation, photocopying and library orientation.	5	10
3.	Waziri Umaru Federal Polytechnic	2007	Brnin Kebbi	Rebinding, dusting, window-cutting, fumigation, photocopying and library orientation.	8	8
4.	Kebbi State Polytechnic	2014	Dakingari	Rebinding, dusting, window-cutting, fumigation, photocopying and library orientation	4	8
5.	Adamu Augie College of Education	1993	Argungu	Rebinding, dusting, and avoiding direct sunlight, library orientation.	3	1
6.	College of Agriculture and Animal Husbandry	1991	Zuru	Rebinding, dusting, and avoiding direct sunlight, library orientation.	2	5
7.	College of Basic Advanced Studies	1991	Yauri	Rebinding, dusting, and avoiding direct sunlight, and library orientation.	4	5
8.	School of Nursing	2007	Brnin Kebbi	Rebinding, dusting, and avoiding direct sunlight, and library orientation.	1	1
	Total		8		31	43

Source: Preliminary Study, 2016

3.4 Population of the Study

Population refers to all the entire entities to be studied in a research. According to Abdulmalik (2006), population is all conceivable elements, subjects or observations relating to particular phenomena of study interest to the researcher. That is, it is the totality of persons, items, objects, issues or observation that shares at least a common attributes or characteristics. Agu (2002) differentiated clearly between target and accessible population. Target population refers to the entire population that fall within the scope of the study while accessible populations are portion or element in the group that are within the scope of the research. In order to ascertain the population of this study, a preliminary survey was considered essential to determine the number of professional and non-professional librarian in the study area (Tertiary Institution Libraries in Kebbi State, Nigeria).

The population of this study consists of 43 professional librarians and non-professional librarians in tertiary institutions in Kebbi State, Nigeria. These include: Federal University Brinin Kebbi, Kebbi State University of Science and Technology, Aliero, Waziri Umaru Federal Polytechnic Birnin Kebbi, Kebbi State Polytechnic Dakingari, Adamu Augie College of Education, Argungu, College of Agriculture and Animal Husbandry, Zuru, College of Basic Advanced Studies Yauri, School of Nursing Brnin Kebbi.

Table 3.2: Population of the Study

S / No	Name of Tertiary Institutions	Year of Establishment	Location	Number of Professionals	Number of Non-professionals
1.	Kebbi State Federal University Kalgo	2014	Kalgo	4	5
2.	Kebbi State University of Science and Technology, Aliero	2006	Aliero	5	10
3.	Waziri Umaru Federal Polytechnic, Birnin Kebbi	2007	Brnin Kebbi	8	8
4.	Kebbi State Polytechnic Dakingari	2014	Dakingari	4	8
5.	Adamu Augie College of Education, Argungu	1993	Argungu	3	1
6.	College of Agriculture and Animal Husbandry, Zuru	1991	Zuru	2	5
7.	College of Basic Advanced Studies	1991	Yauri	4	5
8.	School of Nursing Brnin Kebbi	2007	Brnin Kebbi	1	1
	Total		8	31	43

Source: Preliminary Study 2016

3.5 Sampling Technique and Sample Size

Sampling is the process of selecting a number of respondents for a study in such a way that they represent the larger group from which they were selected (Gay, 2006). The researcher employed purposive sampling method for the study, in collecting data from the participants. In this type of sampling method, selections were made on purpose or based on judgment of the researcher as advised by Abdul-Malik, (2006). The reason for chosen purposive sampling is due to their advantage of open rooms for researcher to select individuals / participants whom the researcher believed are the key informants that will provide information and contributes to researcher's understanding of a phenomenon under study. This gave the researcher the base to know the preservation and conservation

practices of library and information resources adopted by tertiary institution's libraries in Kebbi State.

Sample Size

The researcher purposively selected one (1) officer in charge of preservation in each library. In their absence, the heads of the library in each tertiary institution served as a participant to the study totaling eight (8) librarians form the sample of the study. They were chosen because they were considered to be in the best position to provide data on the preservation and conservation practices in their respective libraries. The sample size is justified based on recommendation of the United State of America for Sight (2015), which stated that, purposive sampling places participants in groups relevant to criteria that fit the research questions.

Table 3:3 Sample Size

S / No	Names of Tertiary Institutions	Sample Size of Librarians
1.	Kebbi State Federal University Kalgo	1
2	Kebbi State University of Science and Technology, Aliero	1
3.	Waziri Umaru Federal Polytechnic Birnin Kebbi	1
4.	Kebbi State Polytechnic Dakingari	1
5.	Adamu Augie College of Education, Argungu	1
6.	College of Agriculture and Animal Husbandry, Zuru	1
7.	College of Basic Advanced Studies Yauri	1
8.	School of Nursing Brnin Kebbi	1
	Total	8

Source: Preliminary Study 2016.

3.6 Instrument for Data Collection

Generally, questionnaire, interviews and observations are used to collect data in a qualitative study. In this study, interview and observation were used. Interviews according to Best and Khan (2007) are used to gather information regarding an Individual's experiences and knowledge, his or her opinions, beliefs and feelings; and demographic data. Aina (2004) observed, that "Interview is an instrument that is used in data collection. It is referred to as oral questionnaires; it involves soliciting information from the respondents through verbal interaction between the researcher and the respondent. The choice of interview method for this study is appropriate because, the problem at hand is essentially a process-oriented activity of a particular group of people conducting in a natural and everyday context as such it requires detailed explanation which cannot be brief without detailed facts, meaning, experiences and observation. Qureshi (2005) justified that "identification and explanation of the process required detailed description. Structured interview was used by the researcher to ask specified set of questions that extract specific information from the respondents. Gay (2006) advocates the use of structured interview in the conduct of qualitative research when he observed that "using a structured interview format allows the qualitative researcher to ask all of the participants the same series of questions. As such, interview was conducted to obtain in-depth description or data from the respondent's survey research. Also, the interview guide was self developed by the researcher. Therefore, the questions were answered within the same context. It is ensured that answers were reliably analyzed and summed, and that comparisons were made with confidence between respondents, subgroup of

respondents or between different survey periods. The interview guide comprised the followings:

Section A: Background information – Demographic Data of the Participants

Section B: Preservation and Conservation Practices

Section C: Preservation and Conservation Challenges

Section D: Level of Success

Observations enable the researcher to describe existing situations using the five senses, providing a "written photograph" of the situation under study (Erlandson, Harris, Skipper, and Allen, 1993). In this study, Participants observation was use by the researcher to develop a holistic understanding of the phenomena under study. According to Bernard (1994), it gives the researcher a better understanding of what is happening in the culture and lends credence to one's interpretations of the observation. Participant's observation also enables the researcher to collect qualitative data through surveys and interviews. It is also a process that enables the researchers to learn about the activities of the people under study in the natural setting through observing and participating in those activities. It provides the context for development of sampling guidelines and interview guides (DeWalt and DeWalt, 2002). It provides the researcher with a source of questions to be addressed with participants. (Schensul, and LeCompte 1999).

3.7 Ensuring the Trustworthiness of the Qualitative Data

Qualitative research gives detailed description and explanation of phenomenon studied rather than providing and analyzing statistics. According to Hall (2011) "Qualitative

research in business, management, marketing, health, education and the social sciences explores organizations issues and phenomena by collecting and analyzing extensive information gathered through interviews, participant observation, document analysis and other methods”. “Trustworthiness” is a common term in qualitative research which is closely related to the term “validity” in quantitative research. This term refers to the credibility, transferability, dependability, and conformability of the research. Credibility in qualitative research means the results of a qualitative study are believable and trustworthy from the perspective of a participant or subject in the research itself. Credibility represents one of four criteria’s for judging the quality of a qualitative research; the other three standards are transferability, dependability and conformability (Marshall and Rossman 2011). While credibility involves trustworthiness from the perspective of participants, transferability means the extent to which findings can be generalized to other settings. Dependability relates to researchers’ response to changes in the setting of the study and how these changes affected the research. Confirmability refers to whether other scholar could corroborate the researcher’s findings.

In order to establish trustworthiness of this study, copies of the interview items were presented to some of the academic staff in the department and librarians for scrutinized.

3.8 Administration of Research Instrument

The interview was personally conducted by the researcher through direct contact with the interviewees. The purpose of conducting a personal interview survey was to explore the responses of the people to gather more and deeper information. According to Sarah Mae Sincero (2012), the researcher made use of a copy of self-developed structured interview schedule during the interview session to collect data from the participants. The interview

was conducted in their respective office at their convenience time; thereby allocating at least thirty minutes to each respondent in order to obtain reliable data for the research. To avoid error and misinterpretation, the researcher made use of audiotape, sheet of paper and pen to record the interview.

3.9 Techniques of Data Analysis

Generally, analysis can be defined as a careful examination of something in order to understand it. In research and statistics, data analysis according to Cohen et al (2007), involves organizing, accounting for, and explaining the data. He further added that it is the process of making sense of data in term of participants' definitions of the situation, noting patterns, themes, categories and regularities. The collected data were analyzed using content (thematic) analysis technique. Content or (Thematic analysis) According to Sambo (2008), is a method of data analysis used in qualitative research to analyze data collected through interviews, focus groups, documentary analysis, and or observations. Sambo further explained that the procedures involve a method of categorizing verbal or behavioral data into a form in which it could be classified, summarized and tabulated. In the context of this study, the narrative based qualitative analysis technique was employed to analyze the interview text of the participant.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents the results of the data collected through interview. The data gathered were analyzed using thematic qualitative data analysis techniques. The interview administered to the participants is centered on the following major areas of the study:

- I. Background information of the librarians
- II. Types of library and information resources
- III. Preservation and Conservation Practices
- IV. Challenges facing Preservation and Conservation Practices
- V. Level of Success Attained

4.2 Response Rate

A total number of eight (8) heads of library in Kebbi state tertiary institutions were interviewed. The response rate was 100%. This is presented as follows:

4.3 Background Information of the Participants

This section comprised names of the tertiary institutions libraries understudy; their year of establishment; the individual participants coding for data analysis; participants' gender; position held by the participants; their years of working experiences; their education qualification as well as the date and the time the interview was conducted.

Table 4.1: Coding of Participants and their Demographic Characters

<i>Name of the Institutions</i>	<i>Codes</i>	<i>Gender</i>	<i>Education Qualification</i>	<i>Position held</i>	<i>Years of working experience</i>	<i>Date & time of the interview.</i>
<i>Kebbi State Federal University Kalgo</i>	<i>P1</i>	<i>M</i>	<i>BLS</i>	<i>Reader Services Librarian</i>	<i>2 Years</i>	<i>20th May, 2016 9.20am – 10.30am</i>
<i>Kebbi State University of Science and Technology, Aliero</i>	<i>P2</i>	<i>M</i>	<i>PhD</i>	<i>Ag. University Librarian</i>	<i>20 Years</i>	<i>20th May, 2016 12.10pm – 1.00pm</i>
<i>Waziri Umaru Federal Polytechnic, Birnin Kebbi</i>	<i>P3</i>	<i>M</i>	<i>BLS</i>	<i>Reader Services Librarian</i>	<i>7 Years</i>	<i>10th May, 2016 9.30am – 10.30am</i>
<i>Kebbi State Polytechnic Dakingari</i>	<i>P4</i>	<i>F</i>	<i>HND</i>	<i>Reader Services Librarian</i>	<i>1 Year</i>	<i>25th May, 2016 10.40am – 11.30am</i>
<i>Adamu Augie College of Education, Argungu</i>	<i>P5</i>	<i>M</i>	<i>MLS</i>	<i>College Librarian</i>	<i>33 Years</i>	<i>30th May, 2016 9.40am – 10.30am</i>
<i>College of Agriculture and Animal Husbandry, Zuru</i>	<i>P6</i>	<i>M</i>	<i>MLS</i>	<i>College Librarian</i>	<i>24Years</i>	<i>6th June, 2016 12.05pm – 1.00pm</i>
<i>College of Basic Advanced Studies. Yauri</i>	<i>P7</i>	<i>F</i>	<i>BLS</i>	<i>Chief Librarian</i>	<i>10 Years</i>	<i>1st June, 2016 12.30pm – 1.10pm</i>
<i>School of Nursing Brnin Kebbi</i>	<i>P8</i>	<i>M</i>	<i>BLS</i>	<i>Chief Librarian</i>	<i>32 Years</i>	<i>30th May, 2016 10.04am – 10.54am</i>

The data in table 4.1 show the summary of the background information of the eight (8) Librarians interviewed in the eight (8) tertiary institutions in Kebbi State. The table reveals various codes assigned to each library in the tertiary institutions in Kebbi State. The code is in conformity with the use of thematic method of analysis when qualitative method is adopted in a research work. code (P1) is assigned to Kebbi State Federal

University Kalgo, code (P2) is assigned to Kebbi State University of Science and Technology, Aliero, code (P3) is assigned to Waziri Umaru Federal Polytechnic, Birnin Kebbi, code (P4) is assigned to Kebbi State Polytechnic Dakingari, code (P5) is given to Adamu Augie College of Education, Argungu, code (P6) is given to College of Agriculture and Animal Husbandry, Zuru, code (P7) is given to College of Basic Advanced Studies and finally, School of Nursing Brnin Kebbi has code (P8). The table also shows that all the Librarians were male except for College of Basic Advanced Studies Yauri and Kebbi State Polytechnic Dakingari has a female Librarian. From the table, it can also be seen that: P4 had Higher Diploma (HND) in Library Sciences; P1, P7 and P8 had degree in library and information sciences; P3, P5 and P6 were in possession of masters' degree in library and information sciences while P2 is in possession of PhD degree in library and information science. Thus, P1, P2, P3, P5, P6, P7 and P8 possessed the minimum qualification required to coordinate the preservation and conservation practices activities. As regards the working experiences of the librarians, the data revealed that majority of the participants have long period of working experiences in library management. Except P1 and P4 that had few years of working experiences which are two years and one year respectively.

The analysis of the above table shows that librarians with BLS certificate has highest number while only one with PhD certificate and one with HND certificate. This shows that all the librarians in Higher Institutions in Kebbi State are professional librarians except P4 that needed additional qualification to update her knowledge in library management.

4.4 Preservation and Conservation Practices

4.4.1 Types of Library Resources Available in Tertiary Institutions in Kebbi State.

Interview Item: Could you please mention the types of library resources available in your library?

In reaction to the above interview, the P1: responded that, the types of library information resources available in his library are Textbooks, Journals, Reference materials, CD Rom, E-books, and Computers; P2 responded that, the types of library information resources that are in his library are Textbooks, Journals, News papers, Reference materials, CD Rom, E-resources, Computer and students' Projects; P3 responded that, the types of library information resources available are of two categories: Print materials such as textbooks, journals, news papers, magazines, pamphlets and students' projects and Non-print materials which include computers and virtual resources; P4 responded that, the information resources available are books, computers, projectors, scanners and printers; P5 responded that, the types of library information resources available in the library are Textbooks, Reference books, Journals, Pamphlets, Computers, CD Rom, and E-resources; P6 responded that, the library information resources that are available in his library are textbooks, reference materials, journals, magazines, students' projects and video cassettes; P7 responded that, the type of library information resources that are in his library are textbooks, journals, news papers, reference materials, CD Rom, E-resources, computers and students' projects while P8 responded that, the types of library information resources in his library are textbooks, reference materials, journals, pamphlets and students' project, computer system, scanner and printer.

4.4.2 Preservation Practices of Library and Information Resources in Tertiary Institutions in Kebbi State:

Interview Item: Kindly share with me the preservation practices of library and information resources in your library

In reaction to the above interview, P1 responded that, preservation practices adopting in his library are regular cleaning of library, dusting, shelving, binding, fumigation, photocopying; proper house-keeping and library students and staff orientation; P2 responded that preservation practices of library and information resources using in his library are binding, dusting, shelving, lamination, digitization, window-cutting, fumigation, photocopying, controlling of temperature by the use of air-conditions and user's education on proper handling of library information resources; P3 responded that the library adopts the following preservation practices: binding, dusting, shelving, fumigation, photocopying and users education on proper handling of information materials; P4 responded that the preservation practices employed by library are: user's education, cleaning and dusting, lamination, fumigation, duplication of materials and the use of standby fire extinguisher; P5 responded that the preservation practices of library and information resources employ are dusting, shelving, user's education, monitoring of readers, fumigation, photocopying, lamination, use of air-conditioners and the use of standby fire extinguisher; P6 responded that the library adopts the following preservation practices: binding, dusting, fumigation, photocopying, collections maintenance, users education on proper handling of information materials and use of air-conditioners; P7 responded that the preservation practices of library and information resources employ in this library are: dusting, shelving, fumigation, binding, photocopying, and the use of air-

conditioners to control extreme temperature; P8 responded that the preservation practices of library and information resources employ are dusting, shelving, user's education, binding, fumigation, photocopying and use of air-conditioners.

4.4.3 Conservation Practices of Library Information Resources in Tertiary Institutions in Kebbi State

Interview Item: Could you kindly share with me the conservation practices of library and information resources in your library?

In reaction to the above interview, P1 responded that, conservation practices adopt in this library are bookbinding, and lamination; P2 responded that conservation practices of library information resources using in this library are bookbinding, book repair and lamination; P3 responded that the library adopted the following conservation practices: bookbinding, book repairs, and laminations; P4 responded that the library conservation practices employed are: book bindings, book repairs and photocopying; P5 the conservation practices of library and information resource employ here are photocopying, lamination, book binding and book repairs; P6 responded that conservation practices of library information resources employ in this library are: bookbinding, book repairs and conservation treatment; P7 responded that the conservation practices of library and information resources employ are: book binding, book repair and lamination; P8 responded that conservation practices of library and information resources employ are lamination, binding, book repair and scanning

4.5 Preservation Challenges Exist in Tertiary Institutions in Kebbi State.

Interview Item: What are the preservation challenges that exist in your library?

In reaction to the above interview, P1 responded that, the major challenges to the effective preservation of library and information resources exist are lack of bindery unit, inadequate funds, lack of technical expertise in the area of preservation, harsh environment conditions and lack of preservation policy. These are considered the major threats to the effective preservation of library and information resources; P2 responded that the problems confronting library in the area of preservation of library and information resources are numerous but principal among them are, lack of bindery unit, lack of well-trained manpower, inadequate funds, lack of preservation equipments and environmental conditions; P3 responded that the following poses threats to successful preservation of library and information resources activities in the library: lack of funds, lack of qualify personnel in the area of preservation, lack of bindery unit and environmental conditions; P4 responded that the challenges in effective preservation of library and information resources are: lack of well trained personnel, harsh environment conditions, instability of power supply, lack of enough funding, climatic condition, lack of preservation policy and lack of preservation equipments.

P5 responded that the difficulties being faced in the task of preservation of library and information resources are: lack of funds, lack of bindery unit, lack of properly trained personnel, poor power supply and lack of preservation policy; P6 lamented that lack of competent manpower in area of preservation, lack of e-equipments for preservation e.g. computer system, scanning machine, photocopier etc., lack of preservation policy, lack of funds, lack of bindery unit, harsh environment conditions and unstable power supply; P7 responded that the problems confronting the library in the area of preservation of library and information resources are numerous but principal among them are lack of bindery

unit, lack of well-trained manpower, lack of funds, lack of preservation policy, and lack of e-equipments for preservation e.g. computer system, scanning machine, photocopier while P8 responded that the challenges in effective preservation of library and information resources are lack of well trained personnel, lack of bindery unit, instability of power supply, harsh environment conditions, lack of funds and lack of commitment by the library staff.

4.5.2 The Challenges Existing in the Conservation of Library Information Resources in Tertiary Institutions in Kebbi State

Interview Item: What are the conservation challenges that exist in your library?

In reaction to this interview, P1 responded that the major challenges to the effective conservation of library information resources are: Lack of binding unit, inadequate funds and lack of technical expertise in the area of conservation. These are considered as the major threats to the effective conservation of library information resources; P2 responded that the problems confronting the library in the area of conservation of library information resources are numerous prominent among these are lack of bindery unit, lack of well-trained manpower and inadequate funds; P3 responded that the following poses threats to successful conservation of library information resources activities in the library: lack of funds, lack of qualify personnel in the area of preservation and conservation, lack of bindery unit; P4: responded that the challenges in the effective conservation of library information resources are: lack of well trained personnel, lack of enough funding, lack of bindery unit and lack of e-equipment for conservation e.g. computer system, scanning machine and lamination machine;

P5 replied that the difficulties faced in the task of conservation of library information resources are: Inadequate funding of the library, lack of bindery unit, lack of properly trained personnel; P6 lamented that; lack of funds, lack of users' education, lack of bindery unit and lack of well trained personnel facing effective preservation of library resources; P7 responded that the problems confronting our library in the area of conservation of library information resources are numerous but principal among them are lack of bindery unit, lack of well-trained manpower and inadequate funds while P8 responded that the challenges in effective conservation of library information resources are lack of well trained personnel, no bindery unit and lack of funds.

4.5.3 Types of Measures Taken to Eliminate or Reduce Preservation Challenges

Interview Item: Kindly explain the types of measures taken to eliminate or reduce preservation challenges mentioned above

In reaction to this interview question, P1 responded that, the measures taken to eliminate or reduce preservation challenges are constant dusting, users' education on proper handling of library information resources and staff-training; P2 responded that to cope with the challenges facing preservation of library and information resources, the following measures were taken: orientation for staff, everyday care, and staff training on preservation and conservation; P3 responded thus: we considered the following measures to eliminate or reduce the challenges facing effective preservation of library and information resources, these are: provision of adequate ventilation, regular dusting of books on the shelves, users' orientation, provision of e-equipments such as photocopier machines, computer system and binding of damage books; P4 responded that this library

is taking the following measures in order to eliminate or reduce the challenges affecting the preservation of library and information resources: regular dusting of books on the shelves, users' education and proper shelving; P5 said, in eliminating or reducing the challenges facing effective preservation of library and information resources, daily routine preventive measures, dusting and use of fungicide etc are being taken; P6 responded by saying, in order to eliminate or reduce the challenges facing effective preservation of library and information resources the following measures are taken: proper housing of documents, protection against heat, humidity, light, air pollution, dust, insects, fungi, fire, water, and mishandling; P7 simply responded that the use of chemicals, dusting and cleaning methods are the measures being taken in eliminating or reducing the challenges facing effective preservation of library and information resources; while P8 responded that, lamination, repair, dusting, proper shelving and control of users are the measures being adopted.

From the responses of the participants, it can be deduced that various measures are being taken by the librarians to protect and preserve the library and information resources. The use of fire extinguisher, sand, chemicals, lamination, dusting and repairing among others are the general efforts being put in place.

4.5.3 Measures Taken to Eliminate or Reduce Conservation Challenges

Interview Item: Kindly explain the types of measures taken to eliminate or reduce conservation challenges mentioned above

In reaction to the above question, P1 replied that, no conservation challenges are being experienced because the institution is a newly established one; P2 said, to cope with the

challenges facing conservation of library information resources, the following measures are taken: provision of e-equipments such as Computer system, photocopier, scanners and lamination machine; P3 simply responded that, book binding, book repairs are the measures used to eliminate or reduce the challenges facing effective conservation of library information resources; P4 said, no measures is being taken to eliminate or reduce conservation challenges because the library is a newly established one; P5 responded was, the library is taken the following measures in order to eliminate or reduce the challenges affecting the conservation of library information resources: lamination, binding of damage books and book repairs; P6 responded that, book binding and book repairs are measures being adopt to eliminate or reduce the challenges facing effective conservation of library information resources; P7 responded that, the repairs and bindings are the measures employ to eliminate or reduce the challenges affecting the conservation of library information resources while P8 responded that, laminations, repairs and bindings are being adopt as measures to eliminate or reduce the challenges affecting the conservation of library information resources.

4.6 Level of Success Attained

4.6.1 The Level of Success Attained in Efforts to Eliminate or Reduce Preservation Challenges.

Interview Item: Kindly explain the level of success attained in efforts to eliminate or reduce preservation challenges

In reaction to the above question, P1 said, no challenges in the area of preservation are being faced because the institution is a newly established one. Thus, no level of success

was attained in these regards; P2 responded that, the level of success attained in efforts to eliminate or reduce preservation challenges are educating the library users on proper handling of library resources, staff training, repair of damage books and re-binding; P3 replied that, the level of success attained in this regards are ability to control mutilation of library materials, acquisition of binding equipments and building of binding unit; P4 replied that the level of success attained in this regards are ability to control mutilation of library materials, regular binding of books, buckets of sand, fire extinguisher and air-conditioner were made available; P5 replied that, the level of success attained in this regards are that many textbooks and journals were rebinding, regular fumigation of library and information resources, time to time users orientation and staff training, e-equipment such as photocopier, lamination, scanner etc were acquired; P6 responded that, it bring longevity of library information resources on use, users education reduce mutilation of library materials, e-equipment such as computer system, lamination machine, photocopier etc were provided; P7 responded that, the level of success attained in this regards are ability to educate the users on proper handling of library resources, staff training and damage books were repair and re-binding. P8: responded that, the level of success attained in this regards is the ability to keep library information resources in good condition.

4.6.2 The Level of Success Attained in Efforts to Eliminate or Reduce Conservation Challenges.

Interview Item: Kindly explain the level of success attained in efforts to eliminate or reduce conservation challenges

in reaction to the above question, P1 responded that no level of success is attained in efforts to eliminate or reduce conservation challenges because the institution is a newly established one; P2 responded that, the level of success attained are repairs of damage books and re-bindings as well as maintenance of library resources to a useable conditions; P3 responded that, the level of success attained are the ability to repair and re-binding damaged library materials and lamination of fading materials; P4 said, the level of success attained are ability of the library to have regular binding of books and simple book repairs; P5 responded that the level of success attained are ability to repair and rebind damage books; P6 responded that, the level of success attained in this regards are that it brings longevity of use to the library information resources and ability to laminate fading materials; P7 responded that, the level of success attained are, ability to repair and rebind damage books; P8 replied that, the level of success attained in this regards are the ability to repair and re-bind damaged library materials and lamination of fading materials.

4.7 The Skills Possessed by Librarians in Preservation and Conservation in Tertiary Institutions' Libraries Understudy.

Interview Item: Kindly explain the skills possessed by you, in preservation and conservation of your library and information resources

In reaction to the above question, P1 responded that, he possesses simple book repair skills and sound knowledge of librarianship; P2 said that, the he possessed simple repair skills, proper maintenance of library and proper handling of information resources; P3 responded that, he possesses binding skills, simple repair skills and collection maintenance; P4 said, the skills possessed by him are constant checking of library users, shelve reading, proper maintenance of library and proper handling of information

resources; P5 said, the skills possessed are simple books repair and binding of damage books; P6 responded that, he possesses skills in self discipline in running library activities; binding and simple repair of torn materials; P7 responded that, there are binding skills, simple book repair skills and collections maintenance skills; P8 responded that, there are books repair skills, binding skills and highly committed to collections maintenance skills.

4.8 The Training Needs in Preservation and Conservation of library information resources in Tertiary Institutions' Libraries understudy

Interview item: Kindly share with me the training needs in preservation and conservation of library and information resources in your library

In reaction to the above interview question, P1 responded that, there is need for training programme such as workshops, seminars and conferences on the care of library and collections maintenance; P2 responded by saying, for effective preservation and conservation practices there must be capacity building for library staff through workshops, seminars, conferences, training and re-training; P3 responded that, library should organized collection maintenance programmes for repairs and educating staff and users on proper handling of library resources; P4 said, there is need for induction training, conferences, seminars and workshops to educate library staff on preservation and conservation of information resources; P5 responded that, staff needs to be trained in the area of collection maintenance and binding; P6 responded that, the knowledge of bindings, book repairs and collection maintenance are needed; P7 said, there should be induction training, conferences, seminars and workshop on preservation and conservation of library resources; P8 responded by saying, there should be preservation and

conservation training programmes to educate staff on simple book repairs, collection maintenance and proper handling of library materials.

The above responses show that, effective preservation and conservation practices need adequate training for all library staff. This is in line with Ngulube (2005) who opined that, for any preservation programme to succeed in libraries and archives there must be adequate and well trained manpower. This is because preservation and conservation of information resources is a specialized field of knowledge that requires information professionals who understand the physical and chemical nature of the materials in their library and archive holding. This can be achieved through conferences, seminar, workshops etc.

4.9 Summary of Librarians Comment on preservation and conservation issues in Tertiary Institutions' libraries under study

Interview Item: Freely comment generally on preservation and conservation issues in your library?

In reaction to the above interview question, P1 responded that, for library information resources to remain in useable condition, library must take preservation and conservation activities as an essential and integral aspect of library management; P2 responded that, the library needs to make preservation and conservation of library and information of resources a priority. This is because it is only by doing so that we will be able to continuously meet the needs of library users, save cost and enrich our collection; P3 responded by saying, preservation and conservation issues should be made known to, and understood by all library staff, and should be the responsibility of all staff; P4 responded that, preservation and conservation activities are not effective in the library because of

insufficient funds, lack of enough manpower as well as poor environmental conditions; P5 responded that, library staff needs to be trained in the area of preservation and conservation of library resources; P6 said, preservation and conservation of library materials are often hindered by financial constraint and lack of well trained personnel in the area; P7 said, preservation and conservation of library materials needs some well trained and committed staff that will properly handle the preservation and conservation activities; P8 said, for effective preservation and conservation of library and information materials there must be availability of bindery unit, trained personnel and adequate funding in the area.

4.10 Findings through Observations

It was observed during site visits to the libraries understudy: P1, P4, and P7 that, the rate at which library information resources was deteriorating is much lower, compared to libraries P2, P3, P5, P6 and P8. Furthermore, it was observed that the damages caused by dust related cases, discolouration and wear and tear was more pronounced in libraries P2, P3, P5, P6, and P8. The floors were regularly mopped with wet cloths to prevented dust from the floors so that it would not settle on the materials.

Bindery unit, the study revealed that all libraries understudy lack bindery unit, therefore, they were force to take library damages materials to commercial bindery outside the institution. It was also observed that library roofing in P4, P5, P6 and P7 are leaking. This allowed water to damage the library materials. It was also observed that the sill of P4, P6 and P8 libraries, were destroyed by the termite. This allowed the dust to settle on the library information resources. It was also observed that, library information resources had been pilling for numbers of year, due to lack of bindery unit and funding. The study

revealed that even if the fund for binding were made available today, it would be impossible to restore some of the materials, due to damages caused while in the storeroom attributable to dust and pest. It was also observed that, some of the library building are not properly roofed which create a passage for water to drop into the library

The findings suggest that, little attention had been paid to restore the damaged library information resources that were piled in the storeroom. Furthermore, findings revealed that the damaged library information resources were the most valuable and were heavily used.

4.11 Discussion of Findings

The report revealed that the following library information resources are available in the libraries studied: Textbooks, Journals, Pamphlets, Government publications, News papers, Reference materials, CD Rom, E-resources, Computers, Students' Projects and Internet facility. The finding is in line with Popoola and Haliso (2009) defined library information resources as those information bearing materials. That is in both printed and electronic formats, such as textbooks, journals, indexes, abstracts, newspapers and magazines, reports, CD-ROM databases, internet / E-mail, video tapes/cassettes, diskettes magnetic disk, computers, micro forms etc. Similarly, Kolade (2001) states that "the library is the heart of the school with wide variety of education media, these media include books, magazines, newspapers, recording maps, films, computer systems and audio-visual information materials such as television, video tapes, camera, slide, transparency, microforms, (microfilms, microfiches) and tape recorder for school project.

The findings revealed preservation and conservation practice in all libraries studied as follows: The use of education and awareness creation as a preservation practice. This is a situation whereby the staff and the users are enlightened on the importance of preservation of library information resources. The usefulness of this practice is as vital as it helps to preserve their information resources. Sylvestre in Okikiri (2012) observes that it is imperative for the librarians, all library staff and users to be educated on preservation awareness or information programme for their staff and users on regular basis.

It was also revealed that, there were adequate air-ventilation and air-conditioners in all the libraries studied. The findings are in line with the findings Senapti and Nagta (1996) that identified the preventive measures in conservation and preservation of library materials and records. These includes proper housing of documents, protection against heat, humidity, light, air pollution, dust, insects, fungi, fire, water, and mishandling. They suggest inclusion of conservation and preservation in library education and training. Robert and Basil (2010) advocated a preventive conservation and preservation approach in African countries, which should focus on improving the environment, controlling light, temperature, humidity, and pollution. This is a vital resources used in moderating the storage environment of libraries.

The same findings on preservation practices showed that all libraries studied do fumigate their library for preventing and controlling of insects, which is in line with Nzotta (1982) that the aspects of library information material preservation have attracted most attention in Nigeria especially on the issue of combating insects and pests. In accordance with this, Igbinoba (1993) in his work on libraries in Sub-Saharan Africa asserts that, the commonest measure taken against insects and pests by the responding libraries was the

use of insecticides. Insect are very destructive, but the researcher believes that they could be controlled by using fumigations as Para-dichloro benzene.

Good storage environment in preservation practice is in use in all the libraries studied, which characterize its significance role in the preservation of library materials. Motylewski cited in Okikiri (2012) affirmation that, one of the important factors in the preservation of books, journals and photographs is their storage environment. To him there is an agreement that high temperature and relative humidity are destructive and that stable environmental condition is extremely important.

From the findings, it can be deduced that the most pressing challenges in the preservation practices of library and information resources facing all libraries studied is lack of funds which affect the provision of effective preservation activities. Without adequate funding, no significant effort can be made in terms of preservation and conservation because funds are needed to buy preservation equipment. Ogunmilade (1996) stated that, sufficient money is required to install air-conditioner in the libraries to check excessive dryness, dust, mould and to make some pamphlets for instructing users on how make proper use of library information resources.

All the participants identified the lack of proper-training personnel in the area of preservation and conservation of library and information resources as challenges facing effective management of library and information resources. This finding is in line with the finding of Sylvester in Okikiri (2012) who maintained that the most critical issue facing preservation efforts is the lack of properly trained personnel. As a result of this, he called for an urgent provision of skilled and professional librarians, duly trained for

preservation activities in academic libraries. In the same vein, Alegbeleye (1996) in his study on the practice of conservation of information materials concludes that, there is lack of technical expertise; Librarians were not well informed about preservation and repair of these materials and for any programme to succeed, there is need to have trained manpower. Conservation and preservation is a specialized field that requires staff that understands the physical and chemical nature of the materials in their custody.

Poor handling is seen to be a problem facing preservation in all the libraries studied. This is surprising because of its very nature, which includes such things as mutilation, opening a book with dirty hands, inserting a pen into a book on locating reference pages, poor shelving, leaving books on the floor, etc which is in agreement with Harvey (1993) and Ogunmilade (1996) who stated that, damage to books are caused by such rough handling like throwing books during disputes or play, dropping books over a short distance, mutilations inserting thick objects to locate the reference pages, ripping off some pages and opening with moistened fingers etc. Therefore, poor handling is one of the major problems of library preservation.

The finding revealed lack of bindery unit as one of the challenges to the effective preservation practices of library and information resources in all the libraries studied, because of this problem, the library has to take damage information materials to commercial bindery. This is not in conformity with Igbinoba (1993) which recalls that, the repair of damage library information resource by the in-house bindery saves libraries a lot of money as well as earning some money from outside jobs.

The finding revealed that, the libraries studies taken the following measure to eliminate or reduce preservation and conservation challenges such as educating the staff and users on proper handling of library information resource, proper shelving, bookbinding, book-repairs, proper housing, and adequate dusting provision of air-conditioners and fire extinguisher which will ensure the longevity of their collections. This is in agreement with Senapti and Nagta (1996) who identify the need for preventive measures in conservation and preservation of library materials and records. These includes proper housing of documents, protection against heat, humidity, light, air pollution, dust, insects, fungi, fire, water, and mishandling. They suggest inclusion of conservation and preservation in library education and training. Harvey (1993) recommended the use of good shelves and control of insects using such things as cedar-wood and insecticide, pesticide and fumigant to destroy the problems of insects and enhance good storage. He stated that for improved storage area, total prohibition of food items, daily cleaning of floors and dusting of books and shelves are necessary.

Academic libraries must ensure the longevity of their collections by improving storage environment. Alegbeleye in Adeleke, Aina, and Lateef, (2011) opined that library materials should be stored in an environment that has controlled temperature and humidity. Libraries should use air-conditioner, humidifiers and other facilities to keep the environment at appropriate level.

In an effort to eliminate or reduce challenges facing preservation and conservation of library and information resource in academic libraries in eight (8) tertiary institution studies by the researcher, the result of the interview conducted with the participants in each institution revealed the following success:

Regular binding and repaired of damaged library information resource to withstand the rigours of library use. Staff and user's education and awareness, keeping the library staff and the users properly aware of preservation role against deterioration is a good practice obtained in many libraries, According to Sylvester cited Okikiri (2012), affirms that, a publicity programme designed to increase the awareness of the problems, solutions and preventive measures of preservation must be undertaken. Libraries ought to educate their staff through workshops seminars, conferences, in service training etc. according to Sylvester, libraries up-date and enhance the knowledge of preservation of their staff by publicizing the 'do's and don'ts of careering for library collection like proper handling of materials, etc. the libraries through awareness creation educate also the users. This is done through orientation programmes and general study classes. Lecturers appeal to the consciences of the users by presenting damage materials and telling the students how the library and the future users will suffer for the act.

Another success attained is the provision of air-conditioner, functional fans and adequate air-ventilation. This helps in controlling high temperature, humidity, mould and fungi which improving storage environment and it bring longevity of their collections. Alegbeleye (1996) opined that library materials should be stored in an environment that has controlled temperature and humidity. Libraries should use air-conditioner, humidifiers and other facilities to keep the environment at appropriate level. Ekoja and Pisadih (1996) observe that, most of the libraries use functional fans, air-conditionals to allow free-flow of air, because librarians are aware that a well regulated temperature and relative humidity are good for the health of library materials.

The real impediment to having viable preservation and conservation programme is not entirely resources-based, but lack of preservation and conservation knowledge. The findings from interview conducted with the librarians (participants) in eight (8) tertiary institutions libraries studied by the researcher, revealed that, all librarians (participants) acknowledge that, for effective preservation and conservation practices, there must be capacity building for library staff through workshops, seminars, conferences, training and re-training programme on preservation and conservation of library and information resources. This is in line with Ngulube (2005) who opined that, for any preservation programme to succeed in libraries and archives there must be adequate and well trained manpower. This is because preservation and conservation of information resources is a specialized field of knowledge that requires information professionals who understand the physical and chemical nature of the materials in their library and archive holding. This can be achieved through conferences, seminar, workshops in-service training etc. to educate library staff on preservation and conservation of library and information resources.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presented the summary of the study. The summary was done chapter by chapter. Thus, a brief summary to the background of the study, review of related literature, methodology, findings, conclusion and recommendations are presented.

5.2 Summary of the Study

The study was designed to investigate the preservation and conservation practices of library and information resources in tertiary institutions' libraries in Kebbi State. The Study is divided into five chapters.

Chapter one is the introduction: It comprised background of the study; statement of the problem; research questions; research objectives; significance of the study; scope and limitation as well as operational definition of terms.

Chapter two literature review: reviewed the literature on types and importance of information resources; concept and significance of preservation and conservation in academic libraries; factors responsible for the destruction or deterioration of information resources; preservation and conservation measures and practices among academic libraries; challenges affecting effective preservation and conservation practices in academic libraries in Nigeria, theoretical framework / conceptual framework and summary of the review and uniqueness of the study.

Chapter three which is methodology: discussed the method used in carrying out the study. The researcher used qualitative research methodology using narrative research design.

Eight (8) librarians from eight Tertiary Institutions' Libraries in Kebbi State were sampled as the participants of the study. Interview and observation were the instruments used to obtain data. The data obtained were analyzed using thematic qualitative analysis.

In chapter four the researcher presented and analyzed the data collected on the basis of the research objectives. The findings were based on background information about the librarian, types of library information resources, preservation and conservation practices, and challenges facing preservation and conservation practices as well as possible measures on how to eliminate or reduce such challenges.

Lastly, chapter five consisted of summary of the study and its findings, a conclusions and recommendations.

5.3 Summary of Findings

The major findings of this study are as follows:.

1. The study found that there were various types of library information resources that were held and maintained by the tertiary institutions' libraries understudy. The information resources are divided into two categories: printed and non-print formats, such as textbooks, journals, newspapers and magazines, reports, student's project, CD-ROM databases, internet, video tapes/cassettes, computers, micro forms etc.
2. The findings found that the libraries studied adopted repair, the user's education, fumigation, air conditioning, proper storage, photocopying/duplication, use of insecticide, binding of damaged books and storage of books away from light to preserve their information sources.

3. The findings also found conservation practices of library and information resource employed by libraries studied, are photocopying, lamination, book binding and book repairs
4. Also, there were many challenges affecting preservation and conservation practice in libraries studied. Prominent among them were lack of bindery unit, lack of well-trained manpower, lack of funds, lack of preservation equipments and environmental conditions. Also the study found that there was no bindery unit in all libraries studied.
5. The study also found that, there were fire extinguishers available in all eight libraries studied, but were not regularly inspected and serviced. Chemicals were chiefly used to control biological agents in the academic libraries studied. The chemical products use was not injurious to human beings. Therefore, preservation standards were not applied consistently.
6. Binding and photocopying were widely used to preserve and facilitate access to library resources in the tertiary institutions libraries understudy. Users carried out photocopying frequently without staff supervision.
7. Also it was found that some level of success were attained that includes staff and users education on proper handling of library resources, staff training, simple repair of damage books and re-binding, regular fumigation, provision of air-conditioners and fire extinguisher.
8. The preservation and conservation training programmes is needed such as induction training, conferences, seminars and workshop to educate staff on simple

book repairs, collection maintenance and proper handling of library information resources.

5.4 Conclusion

From the findings of the study, the following concise conclusions are made thus:

The librarians (participants) responded that, the library information resources are very important because without information resources there will be no library. Therefore, library information resources require preservation and conservation to maintain their values, and relevance.

That the need for policy in preserving and conserving library resources is very important

That, lack of training in preservation and conservation of library materials in the tertiary institutions libraries in Kebbi State has resulted in non-committal to preservation and conservation activities among the majority of library staff. Only a small number of library staff is committed and conversant with preservation and conservation management, while the majority of the staff militated against any comprehensive preservation like good housekeeping and hygiene. This has been pointed out in the study to be among the major contributing factors to the rate of deterioration of library materials in tertiary institutions libraries in Kebbi State.

5.5 Recommendations

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

1. The libraries under study should consider various possible techniques and practices that could be applied to curb the detrimental effects of deterioration factors;
2. Appropriate instructions should be developed for monitoring good housekeeping practices, the proper use of storage facilities, discouraging inappropriate use of photocopiers and encouraging careful handling by staff and users of the libraries under study;
3. There should also be adequate and trained manpower in the libraries under study, for preservation and conservation activities to succeed;
4. Also, budgetary provision be sought for the establishment and development of in-house-keeping infrastructure for preservation and conservation activities;
5. Bindery unit should be established in all tertiary institutions libraries studied.
6. There should be functioning photocopying machine in the library so that all photocopies could be done in the library
7. Additionally, Kebbi State Tertiary Institutions Library should allocate more resources to preservation and conservation activities, store library materials under suitable conditions, reformat heavily, used library materials and those in a poor conditions, undertake conservation treatment, formulate disaster management plans and preservation and conservation policy.
8. Formulate adequate preservation strategies, research and disseminate information on preservation and conservation activities, train and develop staff skills in preservation and conservation techniques and practices and raise awareness of the importance of preservation and conservation.

5.6 Suggested Area of Further Research

This study is specifically carried out on the preservation and conservation practices of information resources in libraries of tertiary institutions in Kebbi State. Therefore, it has brought to the fore, several issues that require further research, which would provide in-depth understanding of the issues critical to the preservation and conservation of library information resources in all libraries, in other states, for the purpose of generalization.

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APPENDIX 1:
PRELIMINARY SURVEY QUESTIONNAIRE

Department of Library & Information Sciences,
Bayero University, Kano,

Date: _____

The Chief Librarian,

Dear Sir,

REQUEST TO FILL THE FOLLOWING QUESTIONNAIRE

I am a postgraduate student of the above named institution, conducting a research on “Preservation and Conservation Practices of Library Information Resources in Tertiary Institutions in Kebbi State, Nigeria.

The attached copy of the questionnaire is meant for feasibility study to collect data which will enable the researcher to apply appropriate research methodology.

You are assured that all the information and data that would be supplied by you, will be treated with utmost confidentiality and used for academic purpose only.

Thanks.

Yours faithfully,

Adebayo Elijah Olusoji

SPS/12/MLS/ 00019

APPENDIX II:
QUESTIONNAIRE FOR PRELIMINARY STUDY

Kindly answer the following questions.

1. Name of Institution

2. When was the Institution established

3. Total number of professional and non-professional staff

4. Preservation practices in your library

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APPENDIX III:
COVERING LETTER

Dear respondents,

I am carrying out a research on the Preservation and Conservation Practices of Library Materials in Tertiary Institutions in Kebbi State. This is for the award of a Master's Degree in Library and Information Science at Bayero University, Kano. The information that will be collected is purely for research purposes and will be used as such. Please spare a few minutes to answer this questions.

Thank you.

Adebayo Elijah Olusoji

SPS/12/MLS/ 00019

APPENDIX IV:
INTERVIEW GUIDE FOR THE LIBRARIANS IN TERTIARY INSTITUTIONS
IN KEBBI STATE

Section A: Personal Data

- I. Status / Rank
- II. Educational Qualification
- III. Years of working experience
- IV. Institution

Section B: Preservation and Conservation Practices

- V. Could you please mention the type of library resources available in your library?

- VI. Kindly share with me the preservation practices of library and information resources in your library

Could you kindly share with me the conservation practices of library and information resources in your library? _____

Section C: Preservation and conservation challenges

- VII. What are the preservation challenges that exist in your library?

VIII. What are the conservation challenges that exist in your library?

IX. Kindly explain the types of measures taken to eliminate or reduce preservation challenges mentioned above

X. Kindly explain the types of measures taken to eliminate or reduce conservation challenges mentioned above

Section D: Level of Success Attained

XI. Kindly explain the level of success attained in efforts to eliminate or reduce preservation challenges

XII. Kindly explain the level of success attained in efforts to eliminate or reduce conservation challenges

XIII. Kindly explain the skills possessed by librarians in preservation and conservation in your library

XIV. Kindly share with me the training needs in preservation and conservation in your library

XV. Freely comment generally on preservation and conservation issues in your library

**Appendix V: Various Photos of Damaged Library Resources in Academic Libraries
Studied**



Figure 1: Some of the damaged books waiting to be repaired pending procurement of binding materials in the Main Library



Figure 2: Bonded Information Resources in Some Academic Libraries Studied



Figure 3: Damage Infrastructure in Some Academic Libraries Studied