COLLECTION AND PRESERVATION MECHANISM OF THE DOCUMENTARY HERITAGE MATERIALS IN THE NATIONAL ARCHIVES, KADUNA, KADUNA STATE, NIGERIA

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Received: 28-Dec-2019, Revised: 10-March-2020, Accepted: 25-March-2020, Published: 13-April-2020

ABSTRACT: This research was conducted in order to assess the collection and preservation of documentary heritage materials in the National Archive, Kaduna. Five research questions and five related objectives were constructed to meet the demands of the research questions. A survey research method was used for the study. The total population of the study was 33 members of staff of the National Archives, Kaduna. Semi-structured questionnaire was used in collecting data from the respondents and compiled, presented and subjected to chi-square statistical analysis at 0.05 level of significance. Findings from the study revealed that the documentary heritage materials in the study area were predominantly newspapers, official manuscripts, official pictures that recorded important events and journals. It was also revealed that documentary heritage materials are mostly acquired through purchases, donations and also weeding from government offices. The study showed that the documentary heritage materials are preserved through the use of iron shelves and dusting the materials/cleaning. The study also showed that lack of modern equipment and facilities, insufficient funds are the major challenges to preservation of documentary heritage materials in National Archives, Kaduna. The main factors that affect the deterioration of documentary heritage materials are un-controlled temperature, relative humidity and chemical factors. The study recommends that digitization of the documentary heritage materials in the study area be given serious attention to avoid loss of some vital information that are in prints.

Keywords: Acquisition, Documentary, Heritage, Management, Records, Preservation.

1. INTRODUCTION

The collection of documentary heritage materials and its preservation is at the very centre of human existence, and forms the core around which all civilizations have developed, including those that pre-date literacy. With the advent of writing, man was given tools and information that accelerated the process of civilization. These heritage collections contain a wide range of organic substances and such substances undergo continual and inevitable natural ageing processes. It is therefore necessary to handle these materials with caution so as to preserve them adequately and make them useful now and for posterity.

According to Rath (2000), documentary heritage materials are those records, artifacts, television documentations, radio/video facts or events that illustrate human nature or anything that prove ownership or have evidential value in written or printed form. Documentary heritage materials are good primary sources of information valuable for proof of ownership and evidence without which a whole clan could be lost.

Collection of documentary heritage materials is a process of gathering such documents together on the basis of their common characteristics e.g. ways of acquisition, subject, language and medium, type of document and name of document (Long and Long, 2000). Documentary heritage materials are collected in order to preserve the historical facts about such organization. Once these documents are acquired whether by donation or purchase, they need to be safeguarded from destruction for as long as possible. Preservation is all the activities that are geared towards the protection of documents from their acquisition, arrangement, maintenance, use and security (Smith, 2002).

It is important to keep in mind that few institutions do not have the time or the money to meet every preservation need for their collections. When resources are limited, choices may have to be made among preservation activities. Every institution with collections of enduring value should have a preservation plan that weighs the need of the collections against institutional resources and provides a host of priority preservation actions. Setting priorities will enable the institution to see the needs and identify steps necessary to achieve the required preservation plan.
1.1. Statement of the Problem

Since 1954 to date, the National Archives, Kaduna has accumulated lots and lots of valuable information materials on documentary heritage that are useful to the public. The acquisition methods adopted by the study area include donation, purchase and gifts from publishing houses, individuals, and governmental organizations. Access to documentary heritage materials is limited and required sensitization by the National Archives (Adelberger, 2004). The National Archives, Kaduna is faced with the primary challenge of unwillingness of family members who are in possession of valuable documentary heritage materials to accept to sell, donate or give out such materials to the Archives. The reasons for their action could be that they doubt the ability of the institution to in handling the documentary heritage materials, and to appreciate their gestures. From the above, there exist the basic problem of developing a National Archives with adequate solutions to challenges faced in the collection and preservation and access to the documentary heritage materials, at the National Archives, Kaduna, in line with the National Policy. This study intends to investigate these gaps in the collection and preservation of documentary heritage materials in the National Archives.

1.2. Research Questions

To direct the course of this study, the following research questions were formulated:

1. What is the nature and characteristics/types of materials in documentary heritage collection?
2. What are the documentary heritage materials to be collected at the National Archives, Kaduna?
3. What methods are adopted for locating, release and conditions attached to release in the collection of documentary heritage materials in the National Archives, Kaduna?
4. What are the effective ways of controlling deterioration of documentary heritage materials in the National Archives, Kaduna?
5. What are the challenges of preserving documentary heritage materials at the National Archives?

1.3. Objectives of the Study

In an attempt to provide solutions to the research gaps stated in the research question, this study was carried out to meet the following objectives:

1. To identify the nature and characteristics or types of materials in documentary heritage materials collection at the National Archives, Kaduna.
2. To identify documentary heritage materials available at the National Archives, Kaduna.
3. To study the ways by which documentary heritage materials are collected at National Archives, Kaduna.
4. To assess the effectiveness of the control measures of deterioration of documentary heritage materials in National Archives, Kaduna.
5. To highlight the challenges of preservation of documentary heritage materials in the National Archives, Kaduna.

1.4. Concept of Documentary Heritage

Many authors have defined documentary heritage from their own perspectives. (Adedeji and Jide, 2011) viewed heritage as an inheritance or legacy; things of value which have been passed from one generation to the next, while the, heritage is what we value or what we wish to pass onto our future generation. This implies that heritage is what is inherited from the past generation as a presented property to be seen, used and passed on to the next generation in remembrance of the ancestors. Buchana (2000) opined that heritage refers to what we are or where we are from, how people quest for their ancestry in search of deeper understanding of themselves. Documentary consists of documents, proofs, or evidence, such as film, cinema or television film, showing some aspects of human or social activities, for example, the work of a great man. Documentary can be a film or radio or television programmes documented as proof or evidence of an activity that has been carried out.

Documentary heritage therefore can be said to be a proof or evidence of what has happened in a particular setting of human or social activities within a particular period of time that has been documented in a physical electronic format which has been handed over to the off springs of the ancestors. Documentary heritage are those records, artifacts, television programme, radio/video, films about real
people or events without fictional colours or professional actors which are collected and preserved (Evans, 2000). Rath (2000) gave the lists of documentary heritage materials as those records such as artifacts, television documentations, radio documentations, video production and number of facts or events that illustrate human nature or anything that proves the ownership in written, printed or captured form.

1.5. Collection of Documentary Heritage Materials

Collection of records is an accumulation of documents of any provenance brought together on the basis of some common characteristics, e.g. ways of acquisition, subject, language, medium, type of document and name of the collection. According to Long and Long (2000), collection of document is a body of document comprising of hard/archive group with other related materials of different provenance. Collection of documents is bringing together groups of records and documents for the purpose of preservation and utilization. These definitions show that collections of records or documents are purposely done for safe keeping, immediate use and for future reference. Amongst the records that can be collected include individual/family documents, records of business organizations, records of religious organizations, and community records. All these are brought together but arranged according to their origin or subject matter (Adikwu and Cordelia, 2007).

In collecting record/documents, either public or private, the records centre or archives through a special programme designed by the managers, thorough search are usually made before these materials are located because such materials are scattered all over the country in public, private hands and institutions. When the records are collected, they undergo what is called appraisal in order to judge the intrinsic value of these records to determine the records that are worthy of permanent preservation (Long and Long, 2000). Efficient allocation of collection efforts and resources requires knowledge of the repository’s present heritage collection, the various subject areas represented, the quality and level of documentation, the chronological distribution of the collection and research value (Banks, 2000).

1.6. Methods Used in Collecting Archival/Cultural Resources

In collecting documents, either public or private, according to Osifeso (2006), record managers do a thorough scrutiny. This is because such materials are scattered throughout the country in both public and private hands as well as institutions. Having located the records, a preparation will have to be made for a tour to observe the condition of the records and also to determine their historical value. This has to be preceded by writing so that the creating agencies are not taken unawares, and to enhance the success of the tour. After the tour or inspection visit, a recommendation letter will be written by the team leader to the department and giving the rough estimate and condition of the document found.

No Archive law or ordinance can ever compel private and individuals to deposit their records in public archive institutions. Therefore, acquisition of private records has to be by persuading the private agencies. This is because the release of such records is not automatic as that of government agencies which is processed through record management (Alegbeleye, 2004). The owner of private record/materials should be persuaded to do either of these:

1. To freely donate their records/materials to archives.
2. To lend them to the Archives for a limited period possibly for copying and after which the originals could be sent back.
3. To make them available for outright purchase by the Archives.

Alegbeleye (2004), further stressed that, it must be explained to the owner what becomes of the records after handing them over to archives. For instance, these records/materials are still his property which could be restricted or unrestricted to searchers if they like. Also, they could be withdrawn if they so desire unless the records have been purchased by Archives. According to him the following conditions could be imposed by the owners and agreed to by the archives:

1. That nobody be allowed to make use of the document for the purpose of research except with the express permission of the owner in writing.
2. That the ‘copyright’ law be strictly observed, i.e. there should be no reproduction of the whole or part of the documents unless such a person has been given permission.
3. The owner could even stipulate the length of deposit after which he could call for the records.
4. That the records be repaired after copying by Archives.
All these are parts of the persuasive methods used on the owners. From the foregoing, it can now be seen that deposit of private records or documents may be controlled by a specific agreement drawn up by solicitors and signed by both owner and Archives or by an informal letter, or still merely by verbal agreement. After the inspection tour had been successfully undertaken, the next thing now is to make an agreement for the collection of the documents. Prior notice should be given before embarking on second tour. It must be confirmed that the vehicle to be used for the collection is without faults so as to avoid unnecessary accidents such as fire and rain which can destroy the records. Having brought them to Archives, the function of collection has been completed.

It is necessary for Archives to devise a basic statement of repository’s mission and collecting goals before actually identifying and acquiring historical collections. This statement may be short or extensive but should articulate in general term, the purpose of the collection’s existence. This mission and collection policy will assist in adding materials to the collections in future and deciding whether or not to accept collections that may be offered to repository. In collecting documents for Archives, after the mission statement and collection policy, Alegbeleye (2004) stated that the next task of the archivist is to identify records that might potentially be of interest. The archivist will physically examine the records and ask a number of questions, these questions often take the form of a records survey. The whole records are examined in their original location to determine whether they should be transferred to the archives.

Once records have been identified, the archivist must decide the types of records to be acquired, this is appraisal. Appraisal of records has been the subject of a great deal of research in recent years and there are various appraisal criteria and tools available in the literature. Although appraisal remains essentially a subjective process, it is important to try to develop guidelines for the repository so that decisions can be made as consistently as possible. The appraisal will help the Archivist to measure the value of records/materials whether they are of primary value or secondary value. The primary value of records is for the organization to assist in carrying out its administrative, financial, legal, and operating activities. Records may also have value to other organizations and/or private researchers which is secondary value and it is for this reason that they are preserved in archives. Emmerson (2004) stated that there are two types of secondary value as evidential value and informational value. Evidential value, according to him, refers to the value of records in documenting the organizational structure and functions of the institution, or the activities of the individual, that created them. Informational value refers basically to the subject content of the collection, information contained in the records about persons, events, places etc. He sets forth three means of judging informational value: uniqueness; the information in them must be more complete and useful whether public or private. The records should also not be duplicated elsewhere, an occurrence that is fairly common in modern public records. In considering the form of information, records that provide concentrated information are the best candidates for retention. The form of the record is also important.

Finally, Emmerson (2004) addresses the issue of importance for long-term scholarly and public research. This type of value is difficult to determine. Certainly, the archivist must acquire as much knowledge about the subject of the collection and current research interests as possible. The needs of professional historian and those researching family as local history must be considered. Archivist generally tries to document those subjects, people, and events that are considered important by the society within the records well created. According to Yakel (2006), collection of documentary heritage materials itself involves both physical and intellectual transfer of the materials to repository. If you are acquiring record created by an organization or individual outside your own, you will need to have legal ownership of the records themselves as objects transfer to you in the form of gift. If possible, legal ownership of the intellectual content should also be transferred, but this is sometimes problematic. You also need to take care that physical transfer of the records are carried out without losing or mixing up the records—not necessarily as easy as it sounds.

1.7. Collection of Documentary Heritage Materials in National Archives, Kaduna

The vision of the National Archives is to support the development of collections within and beyond the National Archives. This involves identifying inactive public and private records, information sources as well as documentary heritages across Nigeria whose potential value has yet to be recognized and to encourage their preservation, safekeeping, use and reuse. Having located the records by the National Archives, Kaduna, and preparation will have to be made for an inspection tour to observe the condition of the records and also to determine their historical values. This has to be proceeded by writing so that the owners are not taken unawares and in order to enhance the success of the tour, after which
recommendations has to be made by the team leader of the inspectors on the materials giving rough estimate and condition of the document found.

Collection of documentary heritage materials in National Archives Kaduna was based on the following strategies:

1. **Scope:** To document across all media and on all formats, key events, activities, decisions and policies that have had effect on people’s lives. To establish a process of open consultation and debate with all identified stakeholders and to agree and practice objectives.
2. **Comprehensiveness:** To consider all potential partners and information source, media and formats across the public and private sectors.
3. **Access:** To facilitate public access to digital and other information, or to provide clear explanation as to why, when, and how access might be limited.
4. **Availability:** To implement mechanisms for making collections available to users, for example online or onsite guides, offering advice, context and appropriate supporting information.
5. **Information Rights:** To acknowledge and communicate the legitimate information rights of creators, owners, custodians and users according to Freedom of Information (F.O.I.) Act (2011).
6. **Community participation:** To support and encourage voluntary community participation in managing and promoting collections to the wider audience.
7. **Collaboration:** To overcome conflicting approaches to collection acquisition, management, preservation and access between collaborating partners and to avoid competition and duplication where possible.
8. **Flexibility:** To be consistent but flexible in approach, recognizing the varying impact of factors such as available resources, technical constraints and information ownership for the success of individual strategies.
9. **Inclusion:** To encourage the contribution of a broad range of interests, views and issues from all sectors of society, including marginalized and minority groups.
10. **Preservation:** To observe best practice, seek guidance and implement standards in preservation where appropriate and practicable.

### 1.8. Preservation of Documentary Heritage Materials

Preservation is the protection of cultural property through activities that minimize chemical, biological and physical deterioration, damage and prevention or loss of information content (Esse, 2000). The primary goal of preservation is to prolong the existence of cultural property. Therefore, preservation is a measure taken by record managers to protect the recorded information from deterioration (Afolabi, 2006). Records as documentary heritage are collected to be preserved for future use. It enables people to know their past and compare with the present. Preservation sets out mainly to ensure information survival and use of the same when the need arises. Preservation is a crucial element in the whole operation of records management. The aim of archive preservation is to prolong the life span of useful research information materials in two ways: first, preventive preservation which seeks to reduce risks of damage and rate of deterioration. This aim is usually accomplished by selecting valuable information materials and by providing suitable storage environments and safe handling procedures. Secondly, prescriptive preservation is a means of identifying and treating or copying damaged materials to restore useful access to the information. From an archival perspective, Cook (2000) stated that preservation is defined as totality of processes and operation involved in the protection of records and archives against damage or deterioration. He went further to state that preservation involves four related activities:

1. **Maintenance:** The daily care of records and archives, particularly in the current and semi-current records environment, when they are housed in offices or record centres. Maintenance ensures the general protection of records against environmental hazards or other physical dangers.
2. **Examination:** The preliminary procedure taken to determine the original materials and structure of an item and to determine the extent of its deterioration, alteration or loss.
3. **Conservation:** The protection of archival materials, by the minimal physical and chemical treatment necessary to resist further deterioration.
4. **Restoration:** This is the repair of an item when aesthetics and reproduction of the original appearance is more important than the preservation of the integrity of the item.
Prevention covers the whole field of preservation programme from which the entire collection benefits from the actions of preservation (Galadanci, 2007). The programme contains four components:

1. Preventative preservation which stands for all direct and indirect steps and provisions that will optimize the environmental conditions and the preservation of and access to the information resource in order to prolong the life span. To start with, it encompasses a clear line of policy that includes training, attitude building and professionalization of all staff.

2. Passive preservation is all direct and indirect steps directed towards the prolongation of the life span of information resources. It includes good house-keeping, purification, air conditioning and repository hygiene. Monitoring is an important feature of passive preservation which is undertaken to survey the physical condition of the collection.

3. Active preservation is all direct and indirect steps and actions on information resources in order to prolong their life span. It includes re-boxing and re-wrapping information resources, clearing information resources, mass de-acidification and disinfecting in order to prolong their life span.

4. Restoration is all actions taken to prolong the life span of the information resources in its original form in compliance with the rules of aesthetics and ethics, while maintaining its integrity. As it is the work of highly trained preservationists who work on individual information resources, thus is the most expensive and time-consuming phase in preservation.

1.8.1. Preservation of Record/Documents

Preservation and planning is essential for good records and archives management. It is better to focus on preventive preservation masses and ensure adequate environmental and physical controls than to focus on conservation treatments for one object to the exclusion of others in the institution. Further, preservation should operate as part of the overall management of the institution. Preservation policies and plans need to be coordinated with other organizational requirements. Ibrahim (2007) stated that as a first step when preserving collection institutions should develop a clearly defined mission statement and collection policy; when resources are limited, it makes most—search to concentrate preservation effects on material that serve the real needs and mission of an organization. Long and Long (2000) enumerated general guidelines to be taken by anyone involved in preservation work as follows:

1. Undertake preservation work on a macro scale: that is, begin with actions that will affect large volumes of material or institution-wide problems.
2. Focus on preventive rather than prescriptive work.
3. Establish a base line of care for all holdings, not just a few precious items.
4. Stress the critical importance of accurate problem diagnosis and solution analysis to programme effectiveness. In particular, treatments to original material should be carefully thought through and planned to match (not exceed) and solve a specific problem or series of related problems, not to create others.
5. Ensuring that storage methods and facilities do not endanger the integrity or authority of documentary materials.
6. Document all treatments fully both before and after ward.
7. Interfer with originals as little as possible.
8. Validate new techniques or technologies by careful and authoritative testing before use.
9. Use no processes or materials that can weaken the material of which the record is made.
10. Choose repair materials and methods of same type as, or sympathetic to, those used in making the original record under treatment.
11. Make sure all repairs or treatments are detectable and reversible.

The most importance ways of preservation or management of records is by archiving the records and ensuring that they are kept in a good and orderly manner, either physical or by administrative management method of good filling of the entire organization. All staff should be trained to handle materials, particularly archives, properly. Good presentation practice is required throughout the institution. The selection good quality equipment in offices or repositions (boxes, trolleys, ladders or steps) will result in a good service, which not only assists the users but also minimizes the damage done to the records or archives as a result of their being used. Preservation to a good standard is not inexpensive, but it is much less costly than having to send large proportions of the materials for repair. Repair of
damaged materials should be a last resort, after the potential for microfilming or copying has been considered.

1.8.2. Preservation Planning

Buchana (2000) emphasized that preservation should be a planned operation, not rarely reactionary in nature. Preservation priorities are determined, corrective actions and their feasibility is reviewed, and resources for implementation are identified. This is the foundation for developing a long-range preservation plan that will help you establish an effective programme for collections care.

Darling and Wester (2003) wrote that it is best to undertake preservation planning by consensus, involving a range of institutional staff. This help to increase staff understanding of preservation issues and binds support for the inevitable changes that the plan will bring. It also establishes the principle that preservation cuts across existing organizational divisions and, indeed, affects virtually every aspect of a repository’s operations. As changes are made, they should be formally articulated in policies and procedures. This will help to institutionalize preservation efforts and create a firm foundation for on-going preservation activities. Steps in preservation planning which encompasses many activities, including:

1. Conducting a preservation survey.
2. Transferring and accessioning selected records.
4. Maintaining environmental conditions suitable to the material stored.
5. Providing accurate and detailed means of accessing and handling of archival materials.
6. Handling material carefully.
7. Maintaining good housekeeping.
8. Deciding whether damaged material should be copied in some way or sent for conservation.
9. Maintaining disaster control plans.

1.8.3. Surveying of Record/Document

According to Dalley (2005), one of the first tasks in establishing a new preservation programme is to conduct a preservation survey. The preservation survey examined all facilities, programmes and materials to determine needs and establish priorities. According to her, the survey should ask questions about:

1. Storage conditions and materials.
3. The holding themselves.

Darling and Wester (2003) stressed that surveys are the best way to determine preservation needs and thus become the basis of the preservation programme. There are two survey methodologies: quantitative and qualitative. According to them, a quantitative survey consists of statistical and random sampling, to determine the extent of acidic paper or deteriorated film in a collection. These “condition surveys” generate important data and provide evidence of patterns of deterioration from inherent use. Gathering data on temperature and humidity through a monitoring programme is another example of quantitative survey. Darling and Wester (2003) reiterated that broader qualitative studies are more common, and in many cases more helpful to cultural institutions. Such surveys generally focus on activities, intended to prevent damage. For example, a qualitative survey might evaluate:

1. A collection management issues (e.g. acquisition, intellectual control, and uses of the collection; staffing; policies and procedures).
2. The building and environment (structure, temperature, relative humidity, light, pollution).
3. Emergency management (fire, water, security, pests, the existence of a plan and training.
4. Storage and handling.
5. Exhibition practices
6. Reformatting.
7. General conservation treatment needs.

This type of survey identifies the risks to the long-term survival of collection and provides options of improving conditions. Such surveys are called “general preservation planning surveys”.

1.9. Preservation of Documentary Materials According to their Media

The variety of records, archives and information materials found in records office, centre and archival institution includes monographs, sounds, newspapers, film, audio recordings, maps videotapes, letter diaries, account books, photographs, documents, slides, posters, leaflets/brochures. The survey of records and infrastructure for acquisition and archival terminologies and setting up of records according (Adikwu and Cordelia, 2007) are important steps to preserving documentary heritage materials. Many institutions have records or achieves in several different media; each of these media types requires particular storage and handling. Information sources require a basic standard of care, but some require more attention and protection because they are difficult or impossible to replace. Records and archives, irrespective of medium and format, require protection throughout their life. Issues of storage and handling are urgent in the archival environment, once records have been identified as having enduring value.

1.9.1. Paper Records

Paper records includes letters, reports, minutes; anything written or typed on a paper base including cartographic records, are maps and plans in paper backing (Miller and Roper, 2005). Schellenberg (2002) concluded in a study that most archival materials are particularly susceptible to damage by biological agent e.g. fungi, bacterial and insects. Brian (2001) stated that the growth of fungi is influenced by such environmental factors as humidity, temperature and light. He noted that the elimination of biological infection requires precautionary measures such as cleanliness and maintenance of proper temperature and relative humidity. Cook (2000) stated that the component substances of records such as paper, glue, leather, gelatine and cloth are not only the favourite foods of vegetable pest such as mouse, but they are highly edible to rats, silver-fish, wood lies, book worms termites and cockroaches. He claimed that the archivist must maintain a regularly monitoring of the archives. The archivist, he says should guard against the strict enforcement of in-house rules ban food consumption to minimize the encroachment of cockroaches, rat and mice. He stressed that proper attention to temperature - humidity control, and the use of fungicides and insecticides should be used to avoid mice and insects. Periodic fumigation of the physical facilities especially storage areas should also be practiced.

Paper record can also deteriorate by chemical agents, Alegbeleye (2004) stated that degradation of paper by chemical agents may be caused by acidic gases, smoke in the atmosphere, dust, ink, etc. or by the adverse action of chemicals used in the manufacture of the paper itself. He stressed that reaction between this gas, oxygen and water vapours present in the air forms sulphuric acid, which is extremely harmful to paper, acting as catalysts removing the water molecule which results in the cleavage or degradation of the paper. One of the research work carried out by Cunha (2009) on presentation of archival materials stated that materials if not properly housed can suffer from disasters. He stated that fire and water are also agents of disaster that affects records. He lists out a catalogue of numerous causes of such disasters to include faulty wiring, burst water pipes, in correctly stored inflammable cleaning agents, leaking roofs, carelessness of workers. Other categories of disasters are theft, vandalism and flooding. He stated that most valuable parts of records need to be identified and stored in the safest location. Cunha further stressed that electrical wiring and plumbing pipes should have regular maintenance checks.

Agents which cause physical deterioration are light, heat and moisture. These bring about photochemical, hydrolytic or oxidative changes in paper. Williams (2001) pointed out that this deterioration is different from the damage caused by insects, fungus etc. It causes yellowing of the document and progressive brittlement which eventually prevents ordinary handling. This according to Williams is caused by subtle chemical changes which affects not only the chemical properties of the materials but the rare and of course its subsequent aging process. Good Environmental conditions are critical to stabilizing paper archives and reducing the chance of deterioration. Ideally, paper records should be kept in complete darkness. Since this is rarely achievable, it is best to try to limit any necessary exposure to light to the shortest time possible, bearing in mind the needs of researchers. Papers should be protected from strong artificial or natural light, especially ultraviolet light. When excluding paper records, light levels should be kept as low as possible. Ideal temperature and relative humidity levels are 28°C to 30°C.

It is best to keep archives in acid-free boxes to keep out water, light, predators and dust. If acid-free boxes are not readily available, any box is better than none, but there should be a programme of replacing them with acid-free boxes as supplies become available. Boxes are an important means of protecting records in offices and centre. Boxes should not be over or under-packed but should be sizeable enough.
for folders, fitting singly within the box (Evans, 2000). If such boxes are not available, archives can be wrapped in unbleached cotton cloth or tied with unbleached cotton tape. Documents should not be folded or bent to accommodate storage containers or shelves, rather, enough space should be provided to allow appropriate storage room. Boxes or bundles should not be longer than the edge of shelves but should sit on shelves that support the entire box.

1.9.2. Newspapers

Buchana (2000) states that Newspapers are often found in archival institutions, particularly if that institution has the responsibility to acquire and preserve such publications. Newspapers are physically very unstable, and an exceptionally poor medium for long-term preservation. The best course of action with newspapers is to microfilm each issue and preserve the original. The original should not be made available for research. If originals are to be kept, then they should be stored out light, as the highly acidic paper will deteriorate even more quickly when exposed to light, heat or excessively dry air. Temperatures should not exceed 200°C and be boxed in made-to-measure acid-free boxes. Alternatively, they should be wrapped in acid-free paper and stored separately from other materials. The purpose of binding newspapers is to cove as them to prevent dust and other agents of deterioration. Some archival institution retains clippings of significant information found in Newspapers. When keeping clippings, it is best to photocopy them onto acid-free bond paper or other high-quality paper and destroy the original.

1.9.3. Framed Items

Archival institutions acquire other framed items such as certificates, photographs or posters. Frame materials are often unstable; the frames and boards used in the framing process often contain high levels of acid and are damaging to the items they hold. Framed materials can be reformed if necessary, using acid-free materials. However, reframing is an expensive process and should only be done if truly warranted, otherwise it is best either to leave the item in the original frame on, if necessary, to remove the item and store it appropriately Long and Long (2000).

1.9.4. Photographic Materials

There are many types of photographic materials; each has its own environmental and physical requirement. Walter (2005) states that there are two general categories are photographic prints and photographic negatives; slides and transparencies. Photographic Prints consist of two parts: an image layer and a support layer. The support layer is usually composed of paper but it may also be made of glass, metal or other materials. The image layer is composed of a number of chemicals, the more chemicals, the more complex the photograph. Black and white photographic images consist of silver, embedded in a gelatin, albumen or collodion ‘binder’, also known as the emulsion layer. Colour images are composed of a number of organic dyes embedded in three layers of gelatin. Because of their chemical composition, black and white photographs are fairly stable to light; colour photographs, on the other hand are much sensitive to light. As well, they can fade in the dark and are easily affected by temperature and humidity. All photographic prints can be damaged by ultraviolet light and dust. But most important factor in the preservation of photographic prints is the stability of temperature and relative humidity. Photographic materials are best kept at temperature below 20°C; 15°C to 25°C while the relative humidity is best at the following percentages:

1. 30 – 35% for black and white.
2. 25 – 30% for colour.
3. 20 – 30 for materials in cold storage.

The cooler the temperature the longer material will last. Photographic materials can be stored as low as 0° or below, but in such instances the relative humidity must be kept at 20-30% to ensure the materials do not dry out.

1.9.5. Motion Picture Film

Walter (2005) also states that moving image film including film strips and reels are composed of the same materials as photographic prints or negative. They should be handled according to the same recommendations for prints and negative. Temperatures should be as cool as possible, and not more than 20°C, relative humidity at 35-45%. Films are best stored in light-tight containers such as film canisters. If metal canisters are used, they should be clean, must be free and without dents or bends. Films should be
kept in their canisters and should be stored vertically on metal shelves or in metal cabinets. Films should be handled with care and cotton gloves should be worn at all times. Films should be handled gently so that they are not pulled or torn. Original film or master copies should not be projected; instead, copies should be made and used for reference and exhibited. It is best to use only hand operated equipment, rather than machine because the automatic equipment runs too quickly and can damage or break the film (Walter, 2005).

1.9.6. Magnetic and Electronic Media

Records created using magnetic media include computer tapes, flash, CD and diskettes, audio cassettes, video cassettes and reel-to-reel audio-tapes. Magnetic media are composed of metallic oxides applied to a carrier such as polyester, cellulose acetate or paper. The oxide surface holds magnetic particles that store information that can be read using appropriate equipment. Electronic materials are those records produced and accessible only using electronic devices that manage data, text, images, sound and motion in complex relationships. Electronic data can be recorded in analogue or digital form and stored on magnetic or optical media such as tapes and diskettes. Electronic materials may be published for limited or wide distribution or may be unique, sound, records or documents intended only for authorized corporation or government use.

Magnetic and digital media have a short life span, at present perhaps not more than 20 to 25 years, though even that may not be an issue if the systems and software to read them are available. High-quality archival storage can prolong their physical life but will not make them last indefinitely. In particular, excessive temperature and high humidity will cause magnetic materials to deteriorate rapidly and electronic data, in particular, will suffer permanent loss. Magnetic media are also highly susceptible to damage from abrasion caused by dust or from oils on fingers. Magnetic media can also be erased if brought into close contact with a magnetic field. Magnetic tapes or diskettes should be kept away from magnetic, electrical equipment, vacuum cleaners and transformers. Magnetic tapes and diskettes should be stored in their original containers, as long as there are clean and fire redundant; cardboard containers should not be used. Tapes and diskettes should be protected from direct light and from dust; a dust-proof cabinet is ideal. Items should be stored vertically, not horizontally. Temperature should be kept at 18°C and relative humidity between 40% – 50%. Sudden or dramatic temperature or humidity changes should be avoided whenever possible (Cunha, 2009). For long-term storage, back-up copies should be made every five to ten years to ensure data is protected. Copies should also be made for public use, so that the original can be safely stored and not placed at risk. Copying equipment should be of good quality, and high-quality tape should be used when making copies. However, it should be remembered that even ideal preservation will not guarantee stability of magnetic materials. It is therefore important to make back-up or copy magnetic materials—most especially electronic records and storing these copies on a safe location apart from the original.

1.9.7. Artifacts

Roper and Millar (2005) stipulated that archival institutions sometimes acquire three–dimensional objects—artifacts—along with archival materials. Artifacts may include globes and maps, coins and medals, trophies and even animal specimens, tools or clothing. Because many of these items are made of organic and inorganic materials, they require a range of environmental conditions. The best course of action is to transfer artifacts to the appropriate institution. If they must be kept, even temporarily, they should be stored in a stable environment away from other archival materials, and advice should be sought from museum professionals about their care or ultimate transfer to a more appropriate facility. Before storing them, label them with a tag attached to the object with string or cotton rope. Adhesive sticker or tags must not be used to label materials. Be sure to identify where they came from and archival materials to which they are related, so that it is possible to maintain information about their provenance once they are transferred to a museum.

1.10. Methods of Preservation of Documentary Heritage Materials in National Archives Kaduna

Preservation of documentary heritage is very important to the development of various cultures. It is a witness of where we have come from and where we are. As stated by Williams (2001), preservation of documentary heritage is essential to sustainable development. It recognizes the importance of cultural continuity and of human history in nourishing social cohesion, a sense of self belonging and peace in a context within which to understand the part and to contemplate the future. The common methods are:
1.10.1. Hygiene of the Reposition

This is prevention of document against the factors responsible for natural ageing. They include keeping the repository clean, the dusting of records, documents and shelves, protection from insects, rodent and other noxious plants by elimination unfavorable conditions which promotes their development, disinfection of records, shelves and repositories and seeing to it that climate conditions are good. These are achieved by temperature and air humidity control and the purification of the air by the use of our-conditioning system.

1.10.2. Binding of Loose sheets

All the collected documents that are in loose files are bound together in one volume so as to see that none of the record is lost. These are kept in the shelves as they are numbered.

1.10.3. Microfilming

Most of the document is very fragile at the collecting point. Therefore what the National Archives does is to microfilm them and keep the originals; the microfilmed ones are given to the researcher who is interested in using them for the research.

1.10.4. Photocopying

Another method of preservation by National Archives is photocopying. This is an easy way of duplicating the original document without losing any part of the original. It is easy, quick and cheaper. The original copy is kept for preservation.

1.10.5. De-acidification

De-acidification in the National Archives is a process of treating documents for the purpose of neutralizing acids within the paper and to create an alkaline buffer. High acidity levels contribute to the deterioration of paper, causing yellowing, brittleness and instability. The National Archives uses non-aqueous de-acidification process as it uses solvents or gases to carry the alkaline buffering agents. They are well suited to treating books and the bound materials because the gas or solvent is able to penetrate deep into the craves and close space of documents and treat the material evenly.

1.10.6. Digitalization

With the present technical logical advancement, many documentary heritage materials are now stored and accessed electronically. This is advantageous because storage space for hard copy documents is highly utilized. Millions of documents are in diskettes, CD ROM, flash drives. Digitization according to (Williams, 2001) is the representation of the document by a discrete set of its points. This simply means capturing an analog signal in digital form.

1.10.7. Summary

The collection of documentary heritage materials and its preservation is as old as human existence, and forms the core around which all civilizations have developed, including those that pre-date literacy. With the advent of writing, man was given tools and information that accelerated the process of civilization. These heritage collections contain a wide range of organic substances and such substances undergo continual and inevitable natural ageing processes. It is therefore necessary to handle these materials with caution so as to preserve them completely and make them useful for as long as possible. According to Rath (2000), documentary heritage materials are those records, artifacts, television documentations, radio/video facts or events that illustrate human nature or anything that prove ownership or have evidential value in written or printed form. Documentary heritage materials are good primary sources of information valuable for proof of ownership, evidence without which a whole clan could be lost.

The National Archives, Kaduna, collects a lot of paper based documentary heritage information resources but few in electronic formats. The storage facilities and equipment are insufficient as well as inadequate storage space. Human development is carried out occasionally at workshops and in-house training and that has in turn maintained the National Archives up to this day.
1.11. Methodology

A research design is a plan, structure and strategy used by any researcher to obtain answers to research questions Oliver (2013). The method used in the study was survey method. Survey method is a study in which large samples of subjects are drawn to sample opinions from the population It is also appropriate because Winner and Dominic (2000) stated that it is concerned with the collection of data for the purpose of describing and interpreting existing conditions, attitudes, ongoing processes and so on. Since this study is concerned with the existing collection and preservation of documentary heritage materials in the National Archives, Kaduna, the survey design adopted is appropriate. The total population of the study was 33 and this comprised of all the members of staff of the various units of the National Archives, Kaduna and the Archives Section of the National Library, Kaduna. Oliver (2013) describes the population of a study as the entire set of people, place or other entity to which measurement refers. It consists of objects in an area of interest, such objects which may be living or non-living must be countable and may be finite or infinite. The whole population of thirty three (33) members of staff of the National Archives was identified as the samples of the study. This is because they are familiar with the collection and preservation of heritage materials in the National Archives Kaduna. The whole population was used because they were few. According to Winner and Dominic (2000) and Oliver (2013) when the population of the study is few; the total population can be used for the sample of the study. The researcher developed a questionnaire that was used in collecting data for this study. The questionnaire was designed with a structure reflecting the order of the research questions. In carrying out the study, the researchers visited the National Archives Kaduna to administer the questionnaire to the respondents and response collected. The data from the respondents were analyzed using frequency count and chi-square statistics. The research questions and hypotheses were analyzed using Chi-square. Chi-square is applied when you have two categorical variables from a single population. It is used to determine whether there is a significant association between the two variables (Westminster Archives Centre, 2008).

1.13. Analysis and Discussion of Results

The study investigated the collection and preservation of documentary heritage materials in the National Archives, Kaduna. To achieve this, five objectives were formulated from which five research questions were raised as well as five research hypotheses tested at 0.05 alpha (α) level of significance. The analysis was undertaken with the use of statistical package SPSS IBM 23 version. A total of 33 respondents were used in the study whose responses formed the basis for the data analysis.

Research Question One: Sought to find out the types of documentary heritage materials available in National Archives, Kaduna.

<table>
<thead>
<tr>
<th>Documentary Heritage Materials</th>
<th>Responses †</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspapers</td>
<td>SA 23, A 3, S 4, SD 3</td>
<td>3.39</td>
<td>9.84</td>
</tr>
<tr>
<td>Journals</td>
<td>SA 8, A 14, S 7, SD 4</td>
<td>2.79</td>
<td>4.19</td>
</tr>
<tr>
<td>Official manuscripts</td>
<td>SA 19, A 5, S 4, SD 5</td>
<td>3.15</td>
<td>7.18</td>
</tr>
<tr>
<td>Gazettes</td>
<td>SA 18, A 5, S 5, SD 5</td>
<td>3.09</td>
<td>6.50</td>
</tr>
<tr>
<td>WAEC and NECO and GCE master list</td>
<td>SA 11, A 8, S 8, SD 6</td>
<td>2.73</td>
<td>2.06</td>
</tr>
<tr>
<td>Records of central Administration</td>
<td>SA 15, A 8, S 6, SD 4</td>
<td>3.03</td>
<td>4.79</td>
</tr>
<tr>
<td>Framed items</td>
<td>SA 13, A 14, S 3, SD 3</td>
<td>3.12</td>
<td>6.08</td>
</tr>
<tr>
<td>Photographic materials</td>
<td>SA 12, A 8, S 5, SD 8</td>
<td>2.73</td>
<td>2.87</td>
</tr>
<tr>
<td>Judiciary records</td>
<td>SA 12, A 8, S 6, SD 7</td>
<td>2.76</td>
<td>2.63</td>
</tr>
<tr>
<td>Films</td>
<td>SA 13, A 10, S 4, SD 6</td>
<td>2.91</td>
<td>4.03</td>
</tr>
<tr>
<td>Electronic materials</td>
<td>SA 13, A 9, S 4, SD 7</td>
<td>2.85</td>
<td>3.77</td>
</tr>
<tr>
<td>Magnetic media</td>
<td>SA 6, A 10, S 4, SD 13</td>
<td>2.27</td>
<td>4.03</td>
</tr>
<tr>
<td>Records of Arabic and ecclesiastical bodies</td>
<td>SA 4, A 9, S 9, SD 11</td>
<td>2.18</td>
<td>2.99</td>
</tr>
<tr>
<td><strong>Cumulative mean</strong></td>
<td></td>
<td>2.86</td>
<td></td>
</tr>
<tr>
<td><strong>Decision mean</strong></td>
<td></td>
<td>2.50</td>
<td></td>
</tr>
</tbody>
</table>

Note †: SA = Strongly agreed, A = Agreed, D = Disagreed, SD = Strongly disagreed.
Table 1 above revealed the response rate of respondents on the availability of documentary heritage materials in the Archives. This is considered a positive response since the cumulative mean on the level of availability was 2.86 which is higher than the 2.50 decision mean. Specifically, a look at the table showed that newspapers are considered to be the most available documentary heritage materials as this view attracted the highest mean availability level of 3.39 with details showing that while 23 consider this readily available the rest 10 do not in the same vein, official manuscripts are considered the next most available documentary heritage materials in the archives as this attracted the second highest mean availability level of 3.15 as details showed that a total of 19 consider this available while the rest of the 14 do not. In summary, among the available documentary heritage materials in the archives are official manuscripts, official pictures and newspapers. This is because newspapers official manuscript. This is because newspapers are published frequently than any other information materials more also that their publications are without predetermined end. (Buchana, 2000). Official manuscripts are next to newspapers in the National archives because the national archives in Kaduna houses information resources that covers the whole 19 (nineteen) Northern states and these information resources are in the form of manuscripts such as official documents of all government offices, documents of local native life, the official papers of native or local authorities, documents of private individuals documents of ecclesiastical bodies and Christian mission and Arabic manuscripts.

**Question Two:** Research question two sought to find out the methods used in collecting documentary heritage materials in the study area.

<table>
<thead>
<tr>
<th>Documentary Heritage Materials</th>
<th>Responses †</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of the materials are through donations</td>
<td>13 SA, 6 A, 7 S, 7 SD</td>
<td>2.76</td>
<td>3.20</td>
</tr>
<tr>
<td>Most of the materials are through purchase</td>
<td>22 SA, 4 A, 6 S, 1 SD</td>
<td>3.48</td>
<td>9.31</td>
</tr>
<tr>
<td>Most of the materials are through legal deposits</td>
<td>9 SA, 13 A, 8 S, 3 SD</td>
<td>2.85</td>
<td>4.11</td>
</tr>
<tr>
<td>Most of the materials are through weeding from government offices</td>
<td>18 SA, 6 A, 5 S, 4 SD</td>
<td>3.15</td>
<td>6.55</td>
</tr>
<tr>
<td>Most of the materials are through Inter Archive Loans</td>
<td>16 SA, 6 A, 5 S, 6 SD</td>
<td>2.97</td>
<td>5.55</td>
</tr>
<tr>
<td>Most of the materials are through gifts</td>
<td>10 SA, 9 A, 8 S, 6 SD</td>
<td>2.70</td>
<td>1.71</td>
</tr>
<tr>
<td>Most of the materials are through other mean</td>
<td>14 SA, 8 A, 6 S, 5 SD</td>
<td>2.94</td>
<td>4.03</td>
</tr>
<tr>
<td>Cumulative mean</td>
<td></td>
<td>2.98</td>
<td></td>
</tr>
<tr>
<td>Decision mean</td>
<td></td>
<td>2.50</td>
<td></td>
</tr>
</tbody>
</table>

Note †: SA = Strongly agreed, A = Agreed, D = Disagreed, SD = Strongly disagreed.

Table 2 showed the respondents’ views on how documentary heritage materials are collected. The cumulative mean of 2.98 is higher than the decision mean of 2.50. Most of the respondents believed the materials were collected through purchase as this opinion attracted the highest mean response of 3.48. While 26 were in agreement, the rest 7 disagreed. In the same vein they believed that most of the materials were collected through weeding from government offices as this opinion attracted the second highest mean response of 3.15, while 18 said this was true but the rest of the 15 said it was not true. In summary documentary heritage materials are collected through purchases and also through weeding from government offices. This is in agreement with Yakel (2006) who stated that the immediate source of acquisition of records is the person or organization from which the materials being described were acquired through donation, purchase, transfer or by inter-archives loan. Yakel (2006) also advised that each institution must establish a consistent policy to determine the information to be included in publicly available descriptive records.

**Research Question Three:** Tried to find out the methods used in preserving documentary heritage materials in national archives, Kaduna.
Table 3. Preservation of Documentary Heritage Materials.

<table>
<thead>
<tr>
<th>Documentary Heritage Materials</th>
<th>Responses †</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of iron shelves</td>
<td>SA 20 A 4 S 6 SD 3</td>
<td>3.24</td>
<td>7.93</td>
</tr>
<tr>
<td>Dusting/clearing</td>
<td>SA 11 A 7 S 9 SD 6</td>
<td>2.70</td>
<td>2.22</td>
</tr>
<tr>
<td>Fumigating</td>
<td>SA 15 A 8 S 8 SD 2</td>
<td>3.09</td>
<td>5.32</td>
</tr>
<tr>
<td>Use of curtains</td>
<td>SA 15 A 8 S 8 SD 5</td>
<td>3.00</td>
<td>4.72</td>
</tr>
<tr>
<td>Steel cabinet vaults</td>
<td>SA 11 A 7 S 5 SD 5</td>
<td>2.79</td>
<td>2.75</td>
</tr>
<tr>
<td>Filing boxes</td>
<td>SA 14 A 6 S 5 SD 8</td>
<td>2.79</td>
<td>4.03</td>
</tr>
<tr>
<td>Any other</td>
<td>SA 13 A 10 S 4 SD 6</td>
<td>2.91</td>
<td>4.03</td>
</tr>
<tr>
<td>Cumulative mean</td>
<td></td>
<td>2.92</td>
<td></td>
</tr>
<tr>
<td>Decision mean</td>
<td></td>
<td>2.50</td>
<td></td>
</tr>
</tbody>
</table>

Note †: SA = Strongly agreed, A = Agreed, D = Disagreed, SD = Strongly disagreed.

Table 3 above revealed the views of respondents on ways documentary heritage materials are preserved and which they believe are positive methods as the cumulative mean response of 2.92 is higher than the decision mean of 2.50. The above Table showed that 3.24 is the mean value of use of iron shelves and followed by use of curtains (3.09), steel cabinet vaults (3.00), etc. Specifically most respondents believed that the use of file boxes can best preserve documentary heritage materials as this opinion attracted the highest mean response of 3.24 while only 4 of the respondents were in agreement. Likewise use of curtains to avoid dust and provision of steel cabinet vaults also preserve documentary heritage materials as this opinion attracted the second highest mean response 3.09 and 3.00 respectively. In conclusion, the best possible methods of preserving documentary heritage materials are the use of file boxes which is in line with Banks (2000) who says it is best to keep archives in acid free boxes to keep out light predators and dust.

Question Four: Attempted to identify the challenges that could be encountered in preservation of documentary heritage materials.

Table 4. Challenges Encountered in the Collection of Documentary Heritage at the National Archives, Kaduna.

<table>
<thead>
<tr>
<th>Documentary Heritage Materials</th>
<th>Responses †</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate support from top level management</td>
<td>SA 14 A 6 S 8 SD 5</td>
<td>2.88</td>
<td>4.03</td>
</tr>
<tr>
<td>Insufficient storage space</td>
<td>SA 9 A 10 S 87 SD 6</td>
<td>2.67</td>
<td>1.71</td>
</tr>
<tr>
<td>Lack of funds</td>
<td>SA 12 A 10 S 3 SD 4</td>
<td>2.91</td>
<td>3.50</td>
</tr>
<tr>
<td>Lack of modern equipment and facilities</td>
<td>SA 16 A 6 S 7 SD 3</td>
<td>3.06</td>
<td>5.56</td>
</tr>
<tr>
<td>Poor control of the storage Environment</td>
<td>SA 13 A 8 S 6 SD 7</td>
<td>2.91</td>
<td>3.40</td>
</tr>
<tr>
<td>Any others</td>
<td>SA 11 A 11 S 5 SD 6</td>
<td>2.85</td>
<td>3.20</td>
</tr>
<tr>
<td>Cumulative mean</td>
<td></td>
<td>2.87</td>
<td></td>
</tr>
<tr>
<td>Decision mean</td>
<td></td>
<td>2.50</td>
<td></td>
</tr>
</tbody>
</table>

Note †: SA = Strongly agreed, A = Agreed, D = Disagreed, SD = Strongly disagreed.

Respondents were of the general view that there are challenges encountered in preserving Documentary Heritage materials. This was because the cumulative, mean response of 2.87 is found to be higher than the decision mean of 2.50. Specifically it was believed that lack of modern storage equipment and facilities is the main challenge as this item attracted the highest mean of 3.06 the details response showing that a total of 22 were in agreement while the rest being 11 were in disagreement. In the same vein, they believed that poor control of the storage environment is another serious challenge as this item attracted the second highest mean response of 2.91. The response have shown that 21 were in agreement, while, 12 were in disagreement. In summary, therefore, there are challenges encountered in the preservation of documentary heritage materials, especially lack of modern storage equipment and facilities as well as poor control of the storage environment.

Research Question Five: Tried to identify the factors responsible for the deterioration of documentary heritage materials in national archives, Kaduna.
Table 5. Perception of Respondents on Factors that Affect Deterioration of Documentary Heritage Materials

<table>
<thead>
<tr>
<th>Documentary Heritage Materials</th>
<th>Responses †</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>A</td>
<td>S</td>
<td>SD</td>
</tr>
<tr>
<td>Mechanical factors</td>
<td>12</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Vandalisation</td>
<td>14</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Fire disaster</td>
<td>9</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Flood</td>
<td>10</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Biological agents</td>
<td>13</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Chemical agents</td>
<td>13</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Uncontrolled temperature and relative humidity</td>
<td>11</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Any others</td>
<td>13</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Cumulative mean</td>
<td>2.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decision mean</td>
<td>2.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note †: SA = Strongly agreed, A = Agreed, D = Disagreed, SD = Strongly disagreed.

Table 5, above has shown the respondents’ views on the factors that affect deterioration of documentary heritage materials. They were generally in agreement with most of the factors listed for deterioration of documents. A cumulative mean response of 2.82 was found to be higher than the decision mean of 2.50. Specifically, majority are of the opinion that biological agents account for the main factors that affect deterioration of documentary heritage materials as this attracted the highest mean response of 2.94 while a total of 21 were in agreement and the rest 12 in disagreement with this opinion. In the same vein, chemical factors are also serious factors that lead to deterioration of documentary materials as this had the second highest mean response of 2.88, while 22 were in agreement, the rest 11 disagreed. Therefore, the main factors that affect deterioration of documentary heritage materials are biological agents and chemical factors, which is in line with Miller and Roper (2005) who says that most papers suffer from problems of acidity. As paper ages, the acidity cause it to become weak and good environmental conditions are critical to stabilizing paper archives and reducing the chance of deterioration.

1.14. Major Findings

The study aimed at assessing preservation activities in the National Archives, Kaduna. The high points of the analysis are summarised as follows:

1. The cumulative mean of the types of documentary heritage materials in Table 4.3.1 was 2.86 which were higher than the decision mean of 2.50, thereby implying that the responses were positive for newspapers (3.39), official manuscripts (3.15), framed items (3.12) almanacs (3.03), official pictures (2.97), films (2.91), and electronic materials (2.85). The study discovered that the documentary heritage materials available in National Archives, Kaduna are mostly newspapers and official manuscripts. Others are gazettes and pictures while very few were magnetic materials.

2. The cumulative mean of the methods of collecting documentary heritage materials in Table 4.3.2 was 2.98, which means that the responses were positive for purchase (3.48), weeding from government offices (3.15), and probably inter archive loans (2.97). The study revealed that collection of documentary heritage materials in the National Archives, Kaduna are mostly by legal purchasing and weeding from government offices.

3. The cumulative mean of the method of used in preserving documentary heritage materials in the National Archives, Kaduna Table 4.3.3 was 2.9. The responses to the research question was positive for the method using iron shelves (3.24), use of curtains (3.09), and steel cabinet vaults (3.00). It was found out that use of iron shelves, steel cabinets and record storage facilities as well as good housekeeping activities are used in preserving documentary heritage materials in the study area.

4. The cumulative mean of the challenges that could be encountered in preservation of documentary heritage material at the National Archives, Kaduna was 2.87. This implies that the responses of the respondents were positive for lack of funds (2.91), poor control of the storage environment (2.91) and inadequate support from management (2.88). The study identified inability to maintain good and conducive consistent storage environment and chemical factors as the major causes of document deterioration in the study area.
5. The cumulative mean of the effective ways of controlling deterioration of documentary heritage materials at the National Archives, Kaduna Table 4.3.4 was 2.82. This implies that the responses of the respondents were positive for biological agents (2.94), chemical factors (2.88), uncontrolled temperature and relative humidity (2.85), and vandalisation. The study found out that lack of modern equipment and facilities and lack of funds as the challenges facing preservation work in the National Archives, Kaduna.

2. CONCLUSION

On the basis of the outcome of the study, the general conclusions that were arrived at were as follows:

1. Among the many available documentary heritage materials in the archives are newspaper, official manuscripts, official pictures and journals.
2. Documentary heritage materials are collected through purchase, donations and also weeding from government offices.
3. Documentary heritage materials are preserved through the use of iron shelves and dusting the materials/cleaning.
4. Lack of modern equipment and facilities, insufficient funds and are the major challenges to preservation of documentary heritage materials in the National Archives, Kaduna.
5. The main factors that affect deterioration of documentary heritage materials are uncontrolled temperature, relative humidity and chemical factors.

3. RECOMMENDATIONS

Based on the findings of the study, the following recommendations are hereby put forward:

1. The available documentary materials such as magnetic and electronic materials are very low; so efforts should be made to get some into the archives for record purposes.
2. There should be cordial inter-relationship and friendship between the Archives and government offices so that more materials can be collected through transfer of non-current materials that have enduring values.
3. More preventive measures be put in place to preserve the materials such as formidable fire proof cabinets, underground tunnels among others.
4. Lack of funds and absence of modern preserving means can be overcome if the government both at the state and federal levels put aside substantial amount of money every year in supporting the Archives division of the library for our historical preservation.
5. Uncontrolled temperature and relative humidity are the main deterioration factor of the documentary materials; therefore the management should support the preservation activities at the National Archives by providing air conditioner good ventilation, sufficient storage space, and provision of modern records storage facilities such as fire proof cabinets, vaults and underground storage system.

REFERENCE


