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Challenges of Maintenance Practices of Paper Based Archival Information Materials and Strategies for Enhancement in Academic Libraries in Nigeria

Abstract

The paper examined the challenges of maintenance of paper based archival information materials and strategies for enhancement in academic libraries in South East, Nigeria which doubled as the objectives of the study. Descriptive survey research method was used for the study. The population consisted of 277 library staff in academic libraries of government owned institutions. Questionnaire and structured interview guide was used to collect data which was analyzed using the Statistical Package of Social Sciences (SPSS) version 20. Mean scores and standard deviation were used to analyze data generated for the two research questions while t-test was used for the hypothesis. Real limits of numbers were used to determine the bench mark. The major findings of the study showed the challenges involved in maintenance of archival materials to include inadequate funding and tropical climate that breeds insects. The strategies involved in archival maintenance practices include: recruiting adequate personnel in libraries, provision of maintenance policies, adequate funding of libraries for proper maintenance of archives, proper control of insect by the use of insecticides and adequate training of maintenance personnel. The hypothesis tested revealed that there is no significant difference in the mean ratings between the male and female library staff in respect to strategies for maintenance practices of paper based archival paper materials in the academic libraries. The paper recommended that the library administrators should engage qualified and competent staff on the field of Library and Information Science and ICT to ensure adequate maintenance of archival materials in academic libraries.

Key Words: Archival Materials, Archives, Academic Libraries, Archival Maintenance Practices, Preservation Challenges, Conservation Prospects, South-East, Nigeria

Introduction

Archival maintenance is not a new phenomenon. The principle of maintenance as a formal library function has been in existence in the libraries; the people of ancient times stored their documents such as scrolls in different casings such as cylindrical boxes of wood and ivory especially the Egyptians, Greeks and Romans (Jordan, 2003 and Teygeler, 2001). In addition, such traditional boxes had stands to enable the documents receive enough air circulation, and the boxes were made from selected wood like cypress, cedar, or paulowina which were insect

repellent. This is pertinent in the history of maintenance of information materials in libraries including academic libraries.

Academic libraries are the hubs of all intellectual activities in the institutions where they exist. Academic libraries are libraries established in tertiary institutions, including Universities, Polytechnics and Colleges of Education (Omekwu and Ugwuanyi, 2015; Okiy, 2012). They provide information materials to support teaching, learning and research activities in their institutions. Also, they maintain different information materials such as archival materials in their host institutions.

Archival materials are information materials that are useful by the reason of their endless values; they are utilized for research purposes in the libraries. Archival materials are unique and rare and can be found only in a repository of a library where it exists (Okegbola as cited in Adeleke, Okusaya and Lateef, 2015). They appear in different formats such as paper, digital and born digital formats. The examples are monographs, inaugural lectures, institutional magazines and newspapers, gazettes, including all information materials generated that have continuous values. These types of materials need proper maintenance in order to prolong their life spans for posterity. However, for the purpose of this study, the focus is archival paper based materials.

Archival maintenance practices is a term that describes those maintenance activities designed to prolong the life span of archival materials by reducing and deferring the need for laboratory treatment and improving the physical storage environment (Ritzenthaler, 1990). Maintenance practices encompass preservation and conservation of information materials irrespective of their formats in their original forms (Swartzburg as cited in Jordan, 2003). Conservation embraces those activities that are geared towards protecting archival materials

from damage while preservation is the maintenance of objects in their original conditions through retention, and proper care (Jordan, 2003).

In the developed continents of the world, archival maintenance practices are practiced at higher levels; there are standard maintenance programmes developed for use at libraries. However, in Africa at large and Nigeria in particular, maintenance scene is in “a dismal state” because of inappropriate buildings, absence and inadequate air conditioners to achieve stability of temperature, lack of qualified staff and equipment for bindery and repair (Mazikana as cited in Ovowoh and Iwhiwhu, 2010). The preliminary investigation by the researchers and observation showed that archival materials in many libraries are not in good shape. Therefore, this research sets to investigate the challenges associated with archival maintenance practices for archival paper based information materials in libraries and the strategies for their enhancements.

Research Questions

The following research questions guided the study:

1. What are the challenges involved in the maintenance of paper based archival materials in academic libraries in South East, Nigeria?
2. What are the strategies for enhancing maintenance of paper based archival materials in academic libraries in South East, Nigeria?

A null hypothesis also guided the study at the level of 0.05 level of significance:

HO: There is no significant difference in the mean ratings of male and female library staff with respect to archival maintenance practices strategies for archival paper based materials in academic libraries.

Challenges of Archival Maintenance Practices for Archival Paper Based Information

Materials in Academic Libraries

The challenges associated with archival maintenance practices in academic libraries are quite numerous. Popoola and Olatokun as cited in Ogunmodede and Ebijuwa (2013) noted some of them as: inadequate finance and equipment, unfavourable government economic policies, tropical climate, manpower and other infrastructure, lack of preservation and conservation policy, quality of paper and ink, improper maintenance culture and cooperative preservation and conservation venture. In the same vein, Rubin (2004) exposed other factors that impede the maintenance of archives of academic libraries as improper use of materials by patrons and staff, improper lighting, heating and air conditioning, poor plumbing, fire hazards, insects, poor security to prevent theft and mutilation, and lack of disaster plan in case of sudden danger or threat such as flood and fire incidence.

Inadequate Funding

The issue of inadequate funding is a very big challenge. Ishola (2014) argued that 10% of the approved recurrent budget set aside for library development in 1993 in federal university libraries was abolished in 2001. Moreover, the minimum standard for financing the academic libraries such as federal university libraries is yet unknown. However, Igbo and Dike (2010) noted that the major source of funds for academic institutions is through government grants. They informed that on yearly basis, 10% of the total recurrent grant of each academic institution goes to library operations while 60% goes to the purchase of books and journals and 40% for personnel emolument of other consumables in the library. This is in conformity with National Universities Commission (NUC) memorandum in 1993 on government budgetary allocation for academic libraries. This shows that library votes cater for procurement of information materials

while little or no fund is actually allocated to the maintenance of these materials especially archival materials.

Inadequate Equipment/Maintenance Tools

Inadequate equipment/maintenance tools can impede the maintenance practice of academic libraries. Echezona (2010) stated that the absence of required equipment to measure the levels of humidity, temperature and air pollution has made environmental factors become more challenging with regards to archival maintenance practices. In most archives and libraries in general, there is lack of qualified staff and equipment for bindery and repair. In addition, some equipment for maintenance of archives are obsolete and need to be changed to modern ones.

Unfavourable Government Economic Policy

An unfavourable government economic policy is a challenge to the maintenance of archives of academic libraries for effective service delivery in academic libraries in Nigeria. Attama and Obaseki (2010) noted that unfavourable economic policies which led to economic recession in Nigeria brought about obsolete and unserviceable equipment. Ogunsola and Ikegune (2016) opined that economic policies include the high duties and tariff charged by the government on the account of importation of equipment for the maintenance of archival and other library materials. This shows that economic policies and recessions are not favourable for the maintenance of archives for effective service delivery in academic libraries.

Tropical Climate

Tropical climate is another challenge. Tropical climate is a non-arid climate and all through the year, there is mean temperature of at least 180 C or (64o F) which shows that they are usually hot with only two seasons namely: dry and wet seasons (Mcknight and Hess, 2000). The tropical climate encourages the breed of insects such as cockroaches, termites, booklice, and

rodents such as rats, mice, etc. which endanger the archival materials by causing damage and stains on them. Ogunsola and Ikegune (2016) revealed that the effects of tropical climate include high relative humidity, dust and excessive temperature that speed up the rate of deterioration of archival materials.

Lack of Maintenance Policy

Lack of maintenance policy is another challenge to many archives of academic libraries. Ovowoh and Iwhiwhu (2010) are doubtful that many Nigerian libraries and archives have policy documents and maintenance librarians. However, policy document is a foundation for any meaningful maintenance practices in archives. Policy documents interpret in clear terms what should be done and how to go about it in relation to the maintenance of archives of academic libraries.

Improper Maintenance Culture

Improper maintenance culture refers to mishandling of archival materials, exposing them to humid conditions, neglecting the materials when they are slightly torn, marking the materials with ink, folding, dog-earing and bad shelving practices. Oghenetega and Ebele (2014) emphasized that improper maintenance culture speeds up the level of deterioration of archival and library information bearing materials. They further discovered that books as well as paper-based archival materials can last for five hundred years if properly maintained.

Improper Lightening

Improper lightening is another challenge to maintenance practices of archives in academic libraries. Light is a form of electromagnetic energy with different wavelength radiations both visible and invisible. The visible and invisible effects of light on archival papers

can make them to become brittle and fade in colour (both the paper and ink) (Ibegwam, 2010). Other challenges include security, pollution and lack of trained conservators (Okegbola as cited in Adeleke, Okusaya and Lateef (2015).

Inadequate Training of Library Personnel/ Maintenance Librarians

Maintenance librarians bring about a better conservation effect in the libraries (Alegbeleye, 1993). However, lack of trained maintenance librarians brings inefficiency in the system in the aspect of maintaining archival materials. Effective maintenance of archives of academic libraries requires maintenance administrator or librarian who will be responsible for designing and coordinating all aspects of a preservation program. Jordan (2003:2354) emphasized that the maintenance administrator conducts condition survey needs assessment, strategic planning in order to produce a meaningful overview and profile of an institution's preservation needs.

Strategies for Enhancing Archival Maintenance Practices in Academic Libraries

The strategies for improving archival maintenance practices in academic libraries centre on the methods, ways, and procedures of keeping archival materials in good conditions in order to prolong their life spans. Cloonan as cited in Rubin (2004) suggested development of maintenance programmes such as proper storage facilities, proper environmental control, fostering reformatting and migrating techniques for materials that are physically deteriorating, creating disaster and recovery plans, treating materials that need repair and restoration physically, providing both staff and user education on the overall handling, caring, and use of library and archival materials.

Recruiting Adequate Personnel

Recruiting adequate personnel in academic libraries can be a strategy for enhancing archival maintenance practices. Recruitment of staff is a period when an organization or institution examines people in view of hiring them to serve in different capacities (Walker, in Ekwoba, Ikeije and Ufoma, 2016). Recruitment is intended to bring in the most qualified people into an organization in order to occupy the positions they fit in properly in accordance to their educational background, experience and expertise. The success and failure of an organization depends largely on the quality of staff recruited. In agreement, Ekwoba et.al. (2015) argued that appointments are only successful when good selections of employees are made and they can contribute positively to the organizational goals while poor recruitments can mar the organization's objectives and outlooks in the wider society. As a result of that, it is important for the administration of academic institutions to engage qualified persons to carry out archival maintenance practices in academic library.

Training of Library Personnel

Adequate training of library personnel is another way of ensuring proper maintenance of archival resources. Akussa as cited in Ogunmodede and Ebijiwa (2013) advocated for training of library personnel in order to be skilled for archival maintenance duties. Training of personnel involves education or inculcating the needed skills to staff to carry out a specific duty or job (Azino, 2000). There are different types of training such as on the job training, conferences, workshops, seminars, study visits, in-service training, industrial attachment (Eze, 2012). The essence of training is to improve the job performance of staff and improve their efficiency, productivity and skills (Ganesh and Indradevi, 2015); Ojiambo in Ajidahu, 2007). Training is needed for the library staff to care for archival materials properly.

Provision of Maintenance Policies

Provision of maintenance policies is an important strategy for improving archival maintenance in academic libraries. A policy is a work plan that directs the activities of library staff in an institution. Especially, it specifies how archival materials in academic libraries are to be maintained in order to realize the objectives of the parent institutions. Policy documents interpret activities to be done in order to maintain archival materials at various levels (Ode and Omakoro, 2007). Ritzenthaler (1990) noted that policy guidelines are intended to pass information, give instructions and detailed practices required devoid of curative treatments.

Proper Funding of Academic Libraries

Proper funding of academic libraries is a strategy of improving archival maintenance in the academic libraries. The funding of academic libraries depends largely on the status or ownership; some of them are owned by either government or private individuals. Generally, library funds are generated from their host institutions but Hisle and Emojorho as cited in Ubogu and Okiy (2011) revealed that the academic libraries in the developing countries are mainly funded by the government through government allocations, endowment funds, library fees, gifts and other little sources. This shows that the academic libraries can generate funds from many sources other than the government allocations but it is still needful to fund the academic libraries properly to enable them to maintain the archival resources in order to promote service delivery in academic libraries.

Appropriate Buildings for Academic Libraries

There should be appropriate buildings for academic libraries so as to accommodate archival materials. Ala and O'Connel (2010) emphasized that archives and records buildings must have "safe, secure, healthy, comfortable, durable, aesthetically pleasing and accessible environments". They also noted that archives buildings must be designed in view of the

following: the storage of archived materials for efficiency, protection of the archived materials is the principal design driver for this building type; compartmentalization of storage areas to limit involved area of catastrophic loss in case of fire or system failure; daylight for the staff without harming of archival materials or adversely affect the sensitive indoor environmental conditions; controlled access to archive storage areas; secure and safe loading and receiving areas; secure and controlled public/researcher access.

Control of Light and Proper Air Conditioning

The control of light is vital for the maintenance of archival materials in academic libraries. Echezona (2010) maintained that blinding the windows to avoid direct sunlight, fixing ultra violet filtered windows can help to control excessive light. Jeyraj cited in Mahmood and Mari (2013) opined that installation of air conditioning which will serve for twenty four hours (every day and night) in the storage areas in order to prevent external acidity in paper materials and other atmospheric pollutants. They further advocated for proper ventilation such as cross windows, exhaust and electric fans for proper air circulation where there is no air conditioning systems.

Proper Maintenance Culture

There should be proper maintenance culture in academic libraries especially for archival materials. Oghenetega and Ebele (2014) noted that proper maintenance culture begins with amending the defects like tears and other things found out on time. The library staff should not allow them to deteriorate completely before looking for ways to amend them. Agarwal and Barkeshi as cited in Mahmood and Mari (2013) and Edoka (2000) noted that library staff should keep sensitive, rare and fragile archival materials in containers meant for them, move and carry archival books with trolleys, and also carefulness is needed while photocopying archival

materials in order to avoid damaging the bindings and the spine. Furthermore, they advocated for the use of book ends to provide support for books on the shelves, shelving of books properly without making it to be too tight or too loose. In addition, cleaning of the shelves regularly is proper maintenance culture as well as avoidance of defacing archival materials through marking, folding, face downing of books after reading and finger licking before turning the pages by users. Therefore, proper maintenance culture will help to prolong archival materials for research and other scholarly activities.

Improved Salaries for Staff

An improved salary of staff in order to boost their morale is vital for proper archival maintenance practices for effective service delivery in academic libraries. Salary is a basic income paid to staff or workers usually at the end of the month. Salary is a motivational factor that makes workers to render their services effectively in every workplace (Sule, Amuni, Obasan, and Banjo (2015). Essien as cited in Sule et.al (2015) argued that poor salaries can cause frustrations on the part of workers and they advocated for right payments for workers in different working environments.

Installation of Bindery Sections with Adequate Machineries

Installation of bindery sections with adequate machineries at the libraries is an archival maintenance practice measure that can facilitate service delivery in academic libraries. The academic libraries usually have bindery sections as a place where torn books are repaired. However, it is pertinent to provide adequate machines for proper maintenance of archival materials.

Methodology

The design used for this study was descriptive survey. The area of the study is South East, Nigeria which is usually characterized by excessive humidity, breed of insects and rodents that endanger archival materials. The population of the study was made up of 277 library staff while questionnaire and structured interview developed by the researcher were used to collect data. The data collected was analyzed using the Statistical Package of Social Sciences (SPSS) version 20 and mean scores; the bench mark was 2.50. A null hypothesis was formulated and tested at 0.05 significance value.

Results

Research Question 1: What are the challenges involved in the maintenance of archival paper based materials in academic libraries in South East, Nigeria?

Table 1: The Mean Rating and Standard Deviations on the Challenges Involved in the Maintenance of Archival Paper- Based Materials in Academic Libraries in South East, Nigeria

Challenges involved in the maintenance of archival materials in academic libraries	Universities		Colleges of Education		Polytechnics		Total		Decision
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	
Inadequate funding	3.45	0.71	3.53	0.57	3.57	0.60	3.49	0.66	Agree
Lack of maintenance policy	3.34	0.73	3.33	0.66	3.45	0.63	3.36	0.70	Agree
Inadequate equipment /maintenance tools	3.30	0.79	3.31	0.68	3.48	0.68	3.34	0.75	Agree
Unfavourable economic policies	3.29	0.75	3.33	0.69	3.41	0.68	3.32	0.72	Agree
Improper maintenance culture	3.35	0.70	3.16	0.79	3.41	0.73	3.32	0.73	Agree
Poor remuneration of staff	3.25	0.80	3.34	0.64	3.36	0.83	3.30	0.78	Agree
Lack of trained library/maintenance personnel	3.24	0.81	3.34	0.58	3.41	0.68	3.30	0.74	Agree
Poor remuneration of staff	3.25	0.80	3.34	0.64	3.36	0.83	3.30	0.78	Agree

Lack of adequate personnel in libraries	3.18	0.90	3.41	0.73	3.43	0.70	3.28	0.83	Agree
Tropical climate which breeds insects	3.25	0.68	3.19	0.69	3.43	0.60	3.27	0.67	Agree
Improper lightening	3.27	0.69	3.10	0.69	3.14	0.93	3.21	0.75	Agree
Inappropriate buildings	3.09	0.84	3.02	0.85	3.31	0.80	3.12	0.83	Agree

The results from Table 1 show that out of 12 items raised on the challenges involved in the maintenance of archival paper based materials, 11 items were rated high (agree) while 1 item was rated low (disagree). We can deduce therefore that Inadequate funding (3.49), Lack of maintenance policy (3.36), inadequate equipment /maintenance tools (3.34), unfavourable economic policies (3.32), improper maintenance culture (3.32), poor remuneration of staff and lack of trained library/maintenance personnel (3.30) each. However, inappropriate buildings had the mean of (3.12) which shows that it is not a challenge as indicated by the respondents. There is a close range of standard deviation scores which shows that there is close agreement in the opinions of the respondents.

These findings supported that of Mazikana as cited in Ovowoh and Iwhiwhu (2010) and Akussah in Echezona (2010) as great challenges against the maintenance practices of archival materials in academic libraries and lack of qualified staff for maintaining and handling archival materials in academic libraries as well as lack of equipment for bindery and repair. In addition, Okegbola in Adeleke, Okusaya and Lateef (2015) and Popoola and Olatokun as cited in Ogunmodede and Ebijua (2013) noted that the problems of maintenance of archival materials in academic libraries are economy (poor economy which affects training of library personnel and funding of libraries) and lack of maintenance policy.

Research Question 2: What are the strategies for enhancing archival maintenance of paper based archival materials in academic libraries in South East, Nigeria?

Table 2: The Mean Ratings and Standard Deviations of Respondents on Strategies Involved in the Archival Maintenance Practices for Paper Based Materials in Academic Libraries in South East, Nigeria

Strategies involved in the archival maintenance practices in academic libraries	Universities		Colls. of Edu.		Polytechnics		Total		Decision
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	
Recruiting adequate personnel in libraries	3.56	0.58	3.55	0.57	3.74	0.44	3.60	0.55	VA
Adequate funding of libraries for proper maintenance of archives	3.52	0.73	3.50	0.63	3.67	0.47	3.55	0.66	VA
Installation of bindery sections with adequate machineries at the libraries	3.53	0.56	3.40	0.67	3.62	0.49	3.52	0.58	VA
Improved salaries of staff are important in order to boost their morale.	3.45	0.69	3.43	0.57	3.60	0.49	3.48	0.63	A
Adequate training of library/maintenance personnel.	3.40	0.77	3.40	0.59	3.69	0.47	3.46	0.69	A
There should be appropriate building for libraries	3.43	0.71	3.36	0.52	3.57	0.57	3.45	0.65	A
Proper air conditioning of libraries	3.45	0.72	3.22	0.68	3.57	0.53	3.43	0.68	A
Favourable economic policies in order to boost library funds	3.42	0.76	3.38	0.52	3.53	0.54	3.43	0.68	A
There should be proper maintenance culture	3.43	0.74	3.34	0.61	3.47	0.50	3.42	0.67	A
Proper lightening of libraries	3.45	0.70	3.29	0.56	3.47	0.57	3.42	0.65	A

Results from Table 2 reveal the strategies involved in the maintenance of archival materials. It disclosed that all the items raised were rated high (agree) such as: recruiting adequate personnel in libraries (3.60), adequate funding of libraries for proper maintenance of archives (3.55), proper control of insect by the use of insecticides (3.49), provision of maintenance policies (3.48), adequate training of maintenance personnel (3.46), favourable economic policies in order to boost library funds (3.43), there should be proper maintenance culture (3.42). Finally, the table reveals a close range of standard deviation scores in the respondents' opinions indicating close agreements.

These findings corroborate that of Cloonan as cited in Rubin (2004) that proper treatment of materials and handling of archival and library materials should be enforced in academic libraries. From the interview schedule, it was disclosed that adequate power supply was needed in order to improve archival maintenance practices. It was further gathered that steady power supply in academic libraries would help to power the facilities procured for stabilizing temperature for prolonging the life span of archival materials. Some academic libraries in South East, Nigeria had air conditioners but they were not used constantly to control the temperature.

Hypothesis:

H0₁: There is no significant difference in the mean ratings of male and female library staff with respect to archival maintenance practices strategies for archival paper based materials in academic libraries.

Table 3: T-test Analysis on the Mean Ratings of Male and Female Library Staff with Respect to Archival Maintenance Practices Strategies for Archival Paper Based Materials in Academic Libraries.

Gender	N	Mean	Std. Deviation	Df	Mean Difference	Std. Error Difference	T	Sig. (2-tailed)
Male	118	3.373	.53677	275	-.13886	.06054	-2.294	.023
Female	159	3.512	.46769	1	-.13886	.06179	-2.247	

Table 3 provides the t-test analysis on the mean ratings of male and female library staff with respect to archival maintenance practices strategies for archival paper based materials in academic libraries. The sig. (2-tailed) value is .023 at 275 degree of freedom and at 0.05 level of significance. Therefore, the null hypothesis is not rejected.

Conclusion

Academic libraries as hub of intellectual activities and custodians of information materials, they generate lots of information materials. Those ones that have continuous values are archival information materials, useful for research, historical and evidential purposes. Archival paper materials need maintenance in order to elongate their life spans for posterity.

The study has revealed that the challenges involved in the maintenance of archival paper based information materials in academic libraries are mostly finance related. No meaningful maintenance practice can be adopted in academic libraries without adequate funds. Another challenge is lack of qualified and trained staff resulting in improper maintenance cultures in academic libraries. Additionally, poor remuneration of staff has a negative implication on staff motivation and job performance as library staff are likely to be motivated to work better with improved and good remuneration. However, the strategies that could be adopted to tackle these challenges such as recruiting of adequate personnel, adequate funding of libraries for proper maintenance of archives, installation of bindery sections with adequate machineries at the libraries will enhance the archival maintenance practices for archival paper based materials especially when they are fully implemented in academic libraries.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. The federal government should fund academic institutions properly and as well improve the funding of academic libraries and at least a meaningful percentage of the available fund will be allocated to the maintenance of archival materials in academic libraries for effective service delivery.

2. The library administrators should engage qualified and competent staff on the field of Library and Information Science and ICT to ensure adequate maintenance of archival materials in academic libraries.
3. Training and re-training of library staff is important in order to help them to acquire current, relevant and needed skills to tackle any challenge associated with archival management.

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