



Availability of Disaster Preparedness and Digitization in Archives Preservation in Public Libraries in Rivers State

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Abstract –This study ascertained availability of disaster preparedness and digitization in archives preservation in public libraries in Rivers state. Two objectives and its corresponding research questions and hypotheses guided this study. The descriptive survey design was adopted for this study. The target population of this study comprised 514 library staff drawn from Rivers state library board and staff from Jubilee library Port Harcourt. The sample size for this study was 399 library staff comprising of 227 staff from Rivers state library board and 172 library staff from Jubilee library Port Harcourt. The sample size was determined by Taro Yamane sample size determination formula while a two-stage sampling technique of stratified and simple random sampling techniques was used to select the sample size. A self-structured questionnaire titled availability of disaster preparedness and digitization in archives preservation questionnaire was used as the instrument for data collection. Face and content validation was ensured by three experts. The instrument yielded reliability coefficients of 0.79 with the use of Cronbach Alpha reliability method. Mean and Standard Deviation was used in answering research questions while z-test was used for the inferential statistics. The findings revealed that disaster preparedness and digitization in the preservation of archives are supported and available in public libraries in Rivers state, Nigeria. Based on the findings, it can be concluded that there are significant differences in the responses of Rivers state library board staff and Jubilee library Port Harcourt staff on the terms of the availability of the disaster preparedness and digitization in archive preservation in the public libraries. It was therefore recommended that more librarians should be employed by the Rivers state government so as to make the process of archive preservation in the State’s public libraries through disaster preparedness and digitization less rigorous and efficient.

Keywords: Disaster Preparedness, Digitization, Archives Preservation, Public Libraries.

1. BACKGROUND TO THE STUDY

Preservation is a word commonly used by record offices, libraries and museums to describe the ways in which their collections are safeguarded and kept in good physical condition. Preservation is the means by which information resources from their creation, to their disposition, are protected from all forms of deterioration, mutilation and loss for the use of the present and future generations. The primary goal of preservation is to prolong the life of documentary heritage and to ensure the long-term accessibility of such collections by government, agencies, institutions, business organisations and the public at large (Cloonan & Mahard, 2014). This can be done through a variety of measures aimed both at minimising the risk of loss of records and slowing down, as much as possible, the processes of physical deterioration which affect most archive materials. Studies have shown that the combination of proactive measures with cutting edge tools may provide sustainable archive preservation practice (Ayoung, et al., 2016; Forde & Rhys-Lewis,



2013; Asogwa, 2011). One of such proactive measures as suggested by scholars for archive preservation is disaster preparedness (Ayoung, et al., 2016). Disaster preparedness has to do with the activities and measure taken in advance to ensure effective response to the impact of disasters, including the issuance of timely and effective early warnings and the temporary removal of people and property from a threatened area. Preparedness efforts also aim at ensuring that the resources necessary for responding effectively in the event of a disaster are in place, and that those faced with having to respond know how to use those resources. The activities that are commonly associated with disaster preparedness include developing planning processes to ensure readiness; formulating disaster plans; stockpiling resources necessary for effective response; and developing skills and competencies to ensure effective performance of disaster-related tasks (National Research Council, 2016).

Going forward, digitization has also been suggested by scholars as a likely efficient measure for the preservation of archives in libraries. Digitization in this context has been described as a means of turning information into binary digits. Digitization of library resources is the process of converting analogue information to a digital format (Feather & Sturges, 2003). It is the process of translating a piece of information such as books, sound recording, picture or video into bits. It is based on the foregoing that disaster preparedness and digitization were considered as possible determinants influencing the preservation of archives in public libraries in Rivers state.

2. STATEMENT OF THE PROBLEM

Disaster preparedness and digitization are twins of necessity in the preservation of library resources. Both of them have become urgent issues among others begging for the attention of librarians across the globe. The disaster preparedness and digitization issues seem like solution but at the same time like a huge problem. On the one hand, it is no news that both man-made and natural disaster are sweeping across the globe such as flood, wild fire and so forth and destroying valuables including library resources unannounced. On the other hand, developing countries such as Nigeria is faced with same issue amidst poor culture of maintaining records and funding infrastructures that will last the test of time. In all, the scenario in the foregoing with regards to Nigeria is based on State-by-State cases in the preservation of archives in public libraries. While some States in Nigeria are working with librarians on disaster preparedness and digitization of library resources others have better priorities at the expense of the subject of discourse.

What therefore motivated the researcher is, to ascertain if the government of Rivers state is working with librarians and administrators of public libraries in the State to prepare for the future and forestall the eroding of library resources. In order words, the study sought to assess the disaster preparedness and digitization efforts of the government of Rivers state in the preservation of archives in public libraries in the State.

3. AIM AND OBJECTIVES

This study was aimed at ascertaining disaster preparedness and digitization as measures of archives preservation in public libraries in Rivers state. Specifically, the objectives were to:

1. determine the availability of disaster preparedness in the preservation of archives in public libraries in Rivers state.

2. find out the availability of digitization in the preservation of archives in public libraries in Rivers state.

4. RESEARCH QUESTIONS

1. What is the availability of disaster preparedness in the preservation of archives in public libraries in Rivers state?
2. What is the availability of digitization in the preservation of archives in public libraries in Rivers state?

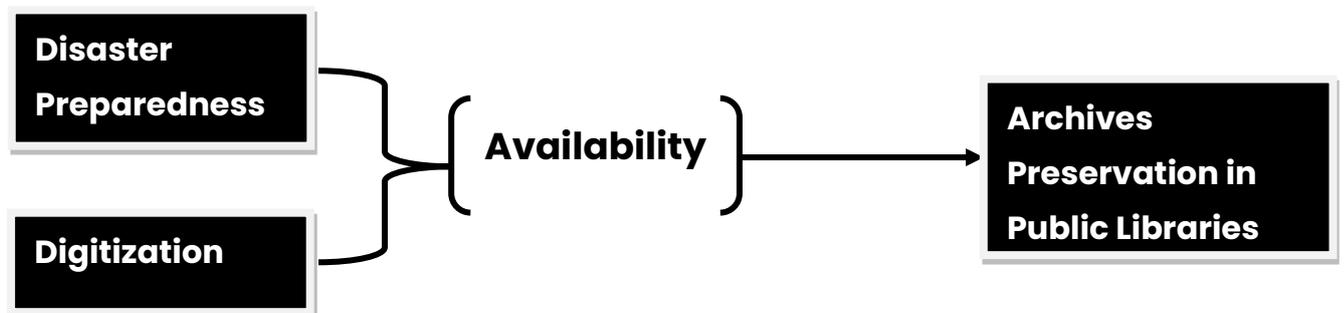
5. HYPOTHESES

The following two (2) hypotheses were tested at 0.05 level of significance.

1. There is no significant difference in the mean scores of staff from Rivers State library board and staff from Jubilee library Port Harcourt on the availability of disaster preparedness in the preservation of archives in public libraries in Rivers state.
2. There is no significant difference in the mean scores of staff from Rivers State library board and staff from Jubilee library Port Harcourt on the availability of digitization in the preservation of archives in public libraries in Rivers state.

5.1 Conceptual Framework

The concept of this study is situated on availability of disaster preparedness and digitization in the preservation of archives in public libraries in Rivers state as diagrammatically represented in figure 1 below.



Source: Researcher's conceptualization (2023)

Fig -1: Conceptual Framework

5.2 Conceptual Review

5.3 Disaster Preparedness and Archives Preservation

Disaster of any form or shape is likely to happen anytime and in most cases, can hardly be forestalled. According to Munasinghe et al (2021) who admitted that though an emergency does not have to become



a full-fledged disaster, many institutional staff often learn the advantages of emergency preparedness through hard experience. Munasinghe et al. stressed that hazards can often be mitigated or avoided altogether by a comprehensive, systematic, emergency-preparedness program; which provides a means for recognizing and preventing risks and for responding effectively to emergencies. The actual damage to collections is usually caused by fire or water, which fall under the categories of man-made disasters. Even when they are not the initial factors, fires and floods almost invariably occur as secondary causes of disasters in libraries.

More so, International Finance Corporation, (IFC, 2010) remarked that planning to forestall disasters and an emergency is something every educational institution must consider, regardless of its size or location. It is not possible to plan for every eventuality that might occur. However, preparation is a key to saving lives if a disaster strikes. International Strategy for Disaster Reduction (ISDR, 2012) explained disaster preparedness as activities and measures taken in advance to ensure effective response to the impact of disasters, including the issuance of timely and effective early warnings and the temporary removal of people and property from a threatened location.

5.4 Digitization and Archives Preservation

Digitization of library resources is the process of converting analogue information to a digital format (Feather & Sturges, 2003). According to Feather and Sturges, it is one of the newest methods of managing information resources in the new information age, whereby information technology has assisted in making information accessible to people even in their homes. Traditional library materials in the form of books, papers, manuscripts, documents, etc. are converted into electronic formats; images (such as photographs or maps) are converted into digital representations using some type of scanning device (or digitizer) so that they can be displayed and manipulated on a screen. Digital institutional resources such as these, manuscripts, special monographs, research papers, or images are of very high value to academic institutions. Cooperation, automation and building of the digital library - all for the enhancement of service delivery in support of teaching and research - are the principal drivers that will shape the collective future of libraries as suppliers of information to the scholarly world (Carr, 2009).

According to Otubelu and Ume (2015), the benefits of digitizing library resources can be summarized as access, support of preservation activities, collection development, institutional and strategies benefits, research and education. Thus, the obvious benefit of digitization is that it enables greater access to collections of all types (Otubelu & Ume, 2015). Also, digitization also makes library resources available electronically, users can access the library digitized resources from their offices and halls of residence even when the library is physically closed.

6. THEORETICAL FRAMEWORK

6.1 Disaster Risk Management Theory

This study is anchored on disaster risk management theory propounded by Rowe in 1977. Disaster risk management theory simply proposes a plan in place to contain with possible of future disaster. This theory has emphasis on reduction of risk (Kitagawa, 2021). Hence, reduction of risk, therefore, means the reduction of the possibility of future disaster. Disaster is a social context or process, triggered by a natural, technological or anthropogenic phenomenon, which in interaction with a susceptible medium causes



intense alterations in the normal functioning of the community (Hewitt, 2013). These alterations may be expressed, amongst other things, as loss of life, serious health problems, damage or destruction of individual and collective goods or severe damage to the environment. For this reason, rapid response is required in order to restore the well-being of affected persons or ecosystems and to re-establish adequate levels of normalcy. Disaster management culminates to any available medium to ameliorate the loss and damage that could affect the lives and properties in the society. This suggests that there are levels and types of loss and damage that do not signify disaster for society. Disaster is a given situation, a product that is tangible and measurable.

7. METHODOLOGY

The descriptive survey design was adopted for this study. The target population of the study comprised of 514 library staff drawn from Rivers State library board and staff from Jubilee library Port Harcourt. The sample size for this study was 399 library staff comprising of 227 staff from Rivers State library board and 172 library staff from Jubilee library Port Harcourt representing 44.16% and 33.46% of the population respectively. The sample size was determined using Taro Yamane sample size determination formula while a two-stage sampling technique of stratified and simple sampling techniques was used to select the sample size. A self-structured questionnaire titled, 'Availability of Disaster Preparedness and Digitization in Archives Preservation Questionnaire (ADPDAPQ)' was used for data collection. Face and content validation was ensured by three experts. The ADPDAPQ consists of ten (10) items of two (2) sections. This was coded in the four-point likert type scale of: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) and weighted as 4, 3, 2, and 1 respectively. The instrument (ADPDAPQ) yielded reliability coefficients of 0.79 with the use of Cronbach Alpha reliability method. Mean and standard deviation was used in answering research questions while z-test was used in testing the null hypotheses at 0.05 level of significance. After the administration of the respective copies of questionnaire to the respondents, 192 of the copies were completely filled and retrieved from Rivers state library board staff representing 84.58% return rate while 161 of the copies were completely filled and retrieved from Jubilee library Port Harcourt staff representing 93.61% return rate.

RESULTS

Answer to Research Questions

Research Question 1: What is the availability of disaster preparedness in the preservation of archives in public libraries in Rivers state?

Table -1: Mean and Standard Deviation scores on the availability of disaster preparedness in the preservation of archives in public libraries in Rivers state.

S/N	Disaster Preparedness	Rivers State library board Staff (n =192)		Jubilee library Port Harcourt Staff (n =161)		Mean Set	Remarks
		\bar{x}	sd	\bar{x}	sd		
1.	Fire-suppression methods are available to help preserve archives from fire outbreak.	2.62	1.62	3.10	1.76	2.86	Agreed
2.	There is plan showing lists of steps to follow if a disaster strikes.	2.58	1.61	3.08	1.76	2.83	Agreed
3.	Roof coverings and flashings are being inspected regularly and repaired as needed.	2.65	1.63	3.23	1.80	2.94	Agreed
4.	Plans are in place to frequently clean gutters and drains.	2.81	1.68	3.05	1.75	2.93	Agreed
5.	Possible steps are in place to control biological agents such as mold, rodents, and insects;	2.73	1.65	3.05	1.75	2.89	Agreed
	Cluster Mean	2.68	1.64	3.10	1.76	2.89	Agreed

Results in Table 1 showed the weighted Mean values for the response of Rivers state library board staff and Jubilee library Port Harcourt staff on the availability of disaster preparedness in the preservation of archives in public libraries in Rivers state. All the items were agreed by the respondents ($xx, > 2.5$) as what is obtainable and available in the preservation of archives through disaster preparedness in public libraries in Rivers state. Thus, the cluster mean value of 2.89 for all the items implies that disaster preparedness in the preservation of archives is supported and available in public libraries in Rivers state, Nigeria.

Research Question 2: What is the availability of digitization in the preservation of archives in public libraries in Rivers state?

Table -2: Mean and Standard Deviation scores on the availability of digitization in the preservation of archives in public libraries in Rivers state.



S/N	Digitization are available through:			Rivers State library Board Staff (n =192)		Jubilee Library Port Harcourt Staff (n =161)		Mean Set	Remarks
				\bar{x}	sd	\bar{x}	sd		
6	Optical	Character	Recognition (OCR).	2.59	1.61	2.91	1.71	2.75	Agreed
7	Optical	Word	Recognition (OWR).	2.89	1.70	2.45	1.57	2.67	Agreed
8.	Intelligent	Character	Recognition (ICR).	2.90	1.71	2.78	1.67	2.84	Agreed
9.	Intelligent	Word	Recognition (IWR).	2.72	1.65	2.34	1.53	2.53	Agreed
10	Cloud	computing	technology.	2.73	1.65	2.63	1.62	2.68	Agreed
	Cluster Mean			2.77	1.66	2.62	1.62	2.69	Agreed

Results in Table 2 showed the weighted Mean values for the response of Rivers state library board staff and Jubilee library Port Harcourt staff on the availability of digitization in the preservation of archives in public libraries in Rivers state. All the items were agreed by the respondents ($xx, > 2.5$) as what is obtainable and available in the preservation of archives through digitization in public libraries in Rivers state. Thus, the cluster mean value of 2.69 for all the items implies that digitization in the preservation of archives is supported and available in public libraries in Rivers state, Nigeria.

8. TEST OF HYPOTHESES

Hypothesis 1: There is no significant difference in the mean scores of staff from Rivers state library board and staff from Jubilee library Port Harcourt on the availability of disaster preparedness in the preservation of archives in public libraries in Rivers state.

Table -3: z-test analysis on the mean difference between the responses of staff from Rivers state library board and staff from Jubilee library Port Harcourt on the availability of disaster preparedness in the preservation of archives in public libraries in Rivers state.

Status	N	\bar{x}	sd	Df	z-cal	z-crit value	Level of significance	Decision
Jubilee library Port Harcourt staff	161	3.10	1.76	351	3.07	1.96	0.05	Significant difference
Rivers State library board Staff	192	2.68	1.64					

Results in Table 3 showed that Jubilee library Port Harcourt staff has mean and standard deviation scores of 3.10 and 1.76 while Rivers State library board Staff has mean and standard deviation scores of 2.68 and



1.64. With a degree of freedom of 351, the z-calculated value of 3.07 was higher than the critical z-test value of 1.96. Therefore, the null hypothesis was not retained. By implication, there was a significant difference between the mean responses of staff from Rivers state library board and staff from Jubilee library Port Harcourt on the availability of disaster preparedness in the preservation of archives in public libraries in Rivers state.

Hypothesis 2: There is no significant difference in the mean scores of staff from Rivers State library board and staff from Jubilee library Port Harcourt on the availability of digitization in the preservation of archives in public libraries in Rivers state.

Table -4: z-test analysis on the mean difference between the responses of staff from Rivers state library board and staff from Jubilee library Port Harcourt on the availability of digitization in the preservation of archives in public libraries in Rivers state.

Status	N	\bar{x}	sd	Df	z-cal	z-crit value	Level of significance	Decision
Rivers State library board Staff	192	2.77	1.66	351	5.21	1.96	0.05	Significant difference
Jubilee library Port Harcourt staff	161	2.62	1.62					

Results in Table 4 showed that Rivers State library board Staff has mean and standard deviation scores of 2.77 and 1.66 while Jubilee library Port Harcourt staff has mean and standard deviation scores of 2.62 and 1.62. With a degree of freedom of 351, the z-calculated value of 5.21 was higher than the critical z-test value of 1.96. Therefore, the null hypothesis was not retained. By implication, there was a significant difference between the mean responses of staff from Rivers state library board and staff from Jubilee library Port Harcourt on the availability of digitization in the preservation of archives in public libraries in Rivers state.

9. DISCUSSION OF FINDINGS

The findings of this study are discussed under the following subheadings:

9.1 Availability of Disaster Preparedness and Digitization in Archives Preservation in Public Libraries in Rivers State

It was found that disaster preparedness is in place for the preservation of archives in public libraries in Rivers state with the regular inspection of roof coverings while observed flashings are being repaired as needed. Also, possible steps are in place to control biological agents such as mold, rodents, and insects. Others are: fire-suppression methods are available to help preserve archives from fire outbreak, there is plan showing lists of steps to follow if a disaster strikes and plans are in place to frequently clean gutters and drains. This finding supports the finding of Issa et al (2012) that many archives and libraries fail to recognize the vulnerability of their collections to loss. Collections can be threatened not just by theft and



vandalism, but by disasters such as fire, flood, tornado, hurricane and earthquake as well as damage from careless handling or poor environmental conditions. Thus, any repository seeking to provide the best possible preservation for its collections must put in place coordinated policies that address all of these threats. Providing the best protection for building and collections from the most common causes of loss is a basic principle of disaster preparedness.

9.2 Availability of Digitization in Archives Preservation in Public Libraries in Rivers State

It was found that the librarians in Rivers state public libraries are conversant with digitization in archives preservation and are making efforts with support from relevant authorities in the availability and use of Optical Character Recognition (OCR) and Optical Word Recognition (OWR) in the preservation of archives. Others are: the availability of -- Intelligent Character Recognition (ICR), Intelligent Word Recognition (IWR) and cloud computing technology in the preservation of archives. This finding supports the finding of Okeke et al (2019) that digitization is an important aspect for public libraries in 21st century. Simply put, it is indispensable in public libraries of nowadays. However, digitizing library resources requires series of different applications and hardware. Notably, digitization has opened up new audiences and services for libraries, and it needs to be integrated into the plans and policies of any institution to maximize its effectiveness. Therefore, utilizing a holistic life cycle approach for digitization initiatives will help develop sustainable preservation of library resources, improve the efficiency of information search mechanisms and enhance access to library resources.

10. CONCLUSION

Based on the findings of this study, it can be concluded that in Rivers state public libraries, there is disaster preparedness and digitization in archive preservation. However, there are significant differences in the responses of Rivers state library board staff and Jubilee library Port Harcourt staff on the terms of the availability of the disaster preparedness and digitization in archive preservation in the public libraries.

11. RECOMMENDATIONS

The following recommendations were made based on the findings of the study

1. More librarians should be employed by the Rivers state government so as to make the process of archive preservation in the State's public libraries through disaster preparedness and digitization less rigorous and efficient.
2. More computer scientists should be employed by the Rivers state government to work with librarians in ensuring available digitization apparatus are effectively used by the librarians for archives preservation.
3. Regular on-the-job-trainings through conferences, seminars and workshops should be organized for all staff of public libraries in Rivers state on current trends in disaster preparedness and digitization of library resources.



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