

Digital Preservation Skills of Electronic Information Resources' Management among Library Personnel in Selected Universities in Nigeria

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ABSTRACT: *Electronic information resources (EIR) management requires skills that are vital for digital preservation; thus, it is imperative that library personnel enhance their skills to cope with the demands of the modern electronic information age. Digital Preservation Skills of Electronic Information Resources' Management among Library Personnel in Selected Universities in Ogun State, Nigeria. Simple random sampling proportionate to size was adopted in selecting 242 respondents (84.4%) out of 286 librarians, library officers, library assistants and support staff from nine (9) purposively selected university libraries in Ogun State. A structured questionnaire was used to collect data on electronic information resources available in selected universities libraries and interview were used to triangulate the data collect with questionnaire data for the research questions. The EIRs preservation skills possessed by library personnel, the EIRs preservation strategies used by the libraries and how EIRs are managed in the selected university libraries. However, only 215 of the 242 questionnaires were found useful (88.8% response rate). Descriptive statistics, Pearson Product Moment Correlation (PPMC) and Ordinary Least Squares regression technique (OLS) were used to analyse the data obtained from the respondents. Results also reveal that e-journal ($\bar{x} = 1.95$), online public access catalogue ($\bar{x} = 1.93$) and Autoregressive Distributed Lag ($\bar{x} = 1.60$) were available in the university libraries. In conclusion, preservation skills and preservation strategies were the major determinants of EIR's management. Therefore, the study recommended that stakeholders and university administration should build the capacity of library personnel's digital preservation skills for enhanced management of EIRs.*

KEYWORDS: digital preservation, electronic information resources management, library personnel, preservation strategies

INTRODUCTION

The current craving of academic library users may lead to a preference for information in electronic format as against the print format, and this may be because of the advent information and communication technologies and the infusion of virtual and digital information resources into library collections globally. Libraries are evolving and going through technological transformations such that university libraries that have erstwhile held in stock, a large number of printed documents are gradually migrating to electronic collections, with the capacity for limitless volumes of the document in digital format. Beer and Mulder (2020) explained that growth in technologies since the 1990s have reformed how information is utilised, managed, stored and accessed. Libraries are migrating their collections to computer-mediated platforms (Hodge, 2018). However, Okogwu and Achebe (2018) pointed out that the emergence of e-resources has forced a change in library operational and organisational procedures.

Electronic Information Resources have led to the changes of information retrieval methods and access to information resources. However, information was previously transmitted manually from library personnel to users. Recently, the majority of the communication and transmission of information are done between users and computers, and this is due to the fact that most information being accessed is stored electronically (Olushola, Nwalo and Ajani, 2020). Thus, the need to engage in digital preservation strategies and have library personnel trained in the skills of managing. Electronic Information Resources in libraries and other information collection centres, noting that the preservation of EIRs is very important. The increased use of the Internet and computers in many information centres as well as the production of Electronic Information Resources combined with the significant challenges related to ensuring the long-term preservation of Electronic Information Resources, means that it is vital that there should be thorough action to overcome these challenges (Hoq and Haque, 2018).

Statement of the Problem

The management of electronic information resources is crucial in the library setting, especially with the proliferation of electronic information resources and the desire of library users to have their information needs to be met electronically. As Electronic Information Resources continue to grow exponentially, libraries are seems to have been faced with the challenge of getting and sustaining adequate skilled staff in electronic information resources management and preservation. Despite the significant benefit of Electronic Information Resource, we still cannot overlook the challenge of ensuring that library personnel are adequately skilled in the preservation of electronic information resources and management could be attributed to a lack of preservation strategies. However, it has also been observed that there is little documented evidence of the skillfulness of library personnel of university libraries in the management and preservation of Electronic Information Resources. Hence, this study sets to examine the digital preservation skills of electronic information resources management among library personnel in selected university libraries in Ogun State.

Research Questions

The study provided answers to the following research questions:

- a) What are the electronic information resources available in the selected university libraries in Ogun State?
- b) What are the digital preservation skills possessed by library personnel in the selected universities in Ogun State?

Research Objectives

The Research objectives are to:

- a) identify the electronic information resources available in the selected university libraries in Ogun State.
- b) determine the digital preservation skills possessed by library personnel in the selected university libraries in Ogun State.

Hypotheses of the Study

The research hypotheses formulated in the null form for the purpose of this study are:

Ho₁: There is no significant relationship between library personnel's digital preservation skills and management of electronic information resources in selected university libraries in Ogun State

Ho₂: There is no significant relationship between digital preservation strategies and management of electronic information resources by library personnel of selected university libraries in Ogun State.

LITERATURE REVIEW

University libraries' staff members should be specially trained in certain preservation techniques, abilities, and tactics. According to Masenya and Ngulube (2020), staff members involved in protecting these resources generally lack the technical know-how and preservation techniques required by library employees in the libraries. Deegan and Tanner (2018) noted that in addition to having limited ICT abilities, the majority of library staff in underdeveloped nations also lacks knowledge of digital preservation. Information professionals should have knowledge in all facets of handling and processing electronic information resources, according to Deegan and Tanner (2018). However, one should create a schedule of services that will draw in and keep the knowledgeable information specialists now working in the area as well as other professionals that fall within the broader definition of library science. The primary issue facing libraries is the deterioration of electronic resources, which has increased the demand for preservation and conservation expertise. In order to properly preserve materials, it is important to take into account the importance of records in terms of their educational, sociopolitical, and economic effects on society. You should also consider how long each class of records should be kept before being destroyed or preserved permanently for use in the future. No library collection is unlimited, though. They are naturally prone to disintegration, making preservation and conservation of them

extremely crucial. Future generations will need to be able to use the information in communication medium effectively, so it is necessary to preserve, conserve, or have an impact on both of these activities. Titles of intellectual or biographical worth should be preserved.

According to Obaseki and Carter (2021), there aren't many sites in third-world nations where one may receive official, specialized training in the preservation of EIRs. They emphasized that the absence of technical know-how is a significant problem in many African nations. Information centers employ a small number of information professionals who are qualified in ICTs. Amaechi, Enweani, and Eke (2018) expanded on this viewpoint by stating that the majority of African information professionals who work in libraries lack the knowledge necessary to instruct others in the management of EIRs. Additionally, Matlala, Ncube and Parbanath (2022), noted in their study that while some information centers were successful in hiring and training workers, they ultimately struggled to retain them. This suggests that in order to manage IT services in libraries that preserve EIRs, it is vital to enforce the proper techniques for hiring and training library staff. In order to enforce license agreements, avoid unauthorized use and the potential for exploitation of these EIRs (Kariuki, Karugu, and Opiyo, 2018). This relates to concerns with copyright and rights administration. For instance, an EIR that has been approved for use on the Internet won't need any particular access management, whereas one that has been approved exclusively for a certain user group will need access management to comply with the license agreement. Libraries will be able to handle the demanding requirements associated with EIRs preservation by explicitly communicating to staff what management of EIRs is expected.

According to Kalusopa, Mosweu and Bayane (2021), in order for ICT employees to stay up with technological advancements, there is a constant need to enhance their abilities. On the other hand, Clemens and Postel (2018), claimed that, in contrast to countries outside of Africa, most trainers in African nations lack competence and are unprepared for the duty of instructing people in the art of EIR preservation. Masenya and Ngulube (2020) contends that staff members who are protecting these resources generally lack technical expertise of EIRs. Further highlighting the fact that incomplete knowledge of the technology and applications necessary for the management of EIRs results from ignorance, Masenya and Ngulube (2020) went further. Therefore, in order to handle and offer access to EIRs, information professionals must acquire new capabilities. According to Masenya, and Ngulube (2020), there aren't many sites in poor nations where one can get a formal, specialized education in the preservation of EIRs. Additionally, they made note of the fact that poor technological proficiency is common in many university libraries. Because there is a shortage of information professionals with computer science degrees (computer engineers) working in libraries, there is a frequent breakdown of ICT infrastructure and disruption of digitized services, which prevents continuous access to EIRs. Most universities still lag behind in ICT infrastructure, which has an impact on the preservation of and access to EIRs, and many university libraries lack the human resources with the necessary skills, capabilities, and attitudes to initiate, implement, and sustain digitisation projects. According to Masenya and Ngulube (2020), managing EIRs to ensure long-term preservation and access is difficult since trainers (library staff) lack experience and are ill-equipped to train others in electronic preservation and digitisation.

According to Patil, (2018), updating information from old technology to new technology on a frequently is necessary to prevent it from becoming inaccessible as a result of technological advancements. When it comes to long-term preservation methods, the information available on different media, such as microfilm and CD-ROM, will only coexist for a while if the proper steps are done in light of these technological advancements (Patil, 2018). According to Masenya and Ngulube (2020), the university library's EIR preservation is severely hampered by insufficient ICT infrastructure, which manifests itself, for instance, in frequent power failures. Electronic resources are harmed as a result, and standby electric generators are expensive to operate where they are present. They went on to say that the majority of African nations lack appropriate and dependable power supplies, which makes it impossible to maintain an atmosphere that is hospitable and sustainable technologically and suited for the preservation of EIRs.

METHODOLOGY

Descriptive survey research design was adopted for the study. Descriptive survey aims at gathering the opinions of the respondents on the study. The population of the study consist of library personnel in the selected university libraries in Ogun State. There were a total of 112 librarians and 174 Library Officers in Ogun State; this gives a total population of 286 library personnel. The population is presented on Table 1.

Table 1: Population of the Study

S/N	Name of Institutions	Librarians	Library Officers	Total
1	Federal University of Agriculture, Abeokuta (FUNAAB)	25	20	45
2	Olabisi Onabanjo University (OOU)Ago Iwoye	17	35	52
3	Tai Solarin University of Education (TASUED) Ijebu-Ode	9	12	21
4	Covenant University	18	28	46
5	Christ land University	2	3	5
6	Mountain top University, Lagos Ibadan Express way	3	6	9
7	Christopher University	2	7	9
8	Crawford University	3	6	9
9	Hallmark University	2	6	8
10	McPherson University	2	8	10
11	Crescent University	5	8	13
12	Bells University	7	10	17
13	Babcock University	15	20	35
14	South/Western University	2	5	7
	Total	112	174	286

Source: Field survey, 2022

Sampling Technique and Sample Size

Total enumeration sampling technique was used to capture the entire librarians and library officers in government-owned universities (federal and state) in Ogun state. This is because there are more librarians and library officers compared with the private universities while a simple random sampling technique was used to select from the private universities to participate in the study.

There are 12 private universities in Ogun state out of which six 6 (50%) of them were randomly selected for the study. This was followed by total enumeration of the librarians and library officers of the selected universities. Thus, a total of 242 library personnel were studied (Table 2)

Table 2: Sample size for the study.

S/N	Name of Institutions	Librarians	Library Officers	Total
	Federal University of Agriculture, Abeokuta (FUNAAB)	25	20	45
	Olabisi Onabanjo University (OOU)Ago Iwoye	17	35	52
	Tai Solarin University of Education (TASUED)Ijebu-Ode	9	12	21
	Covenant University	18	28	46
	Chrisland University	2	3	5
	Christopher University	2	6	8
	Crescent University	5	8	13
	Bells University	7	10	17
	Babcock University	15	20	35
	Total	100	142	242

Source: Field survey, 2022

Data Collection Procedure

Data collection for the study was conducted by the researcher with the help of members of library staff in the selected university libraries; this was to ensure the retrieval of all the copies of the questionnaire. A library staff each from the selected university libraries was briefed by the researcher who visited the libraries and explained how to help distribute and collect the completed questionnaire which ensured a high response rate. Copies of the questionnaire were administered within a period of four weeks. A total of two hundred and forty-two (242) copies of the questionnaires were administered among the respondents. However, two hundred and fifteen (215) copies of the questionnaire which represented 88.8% were found useable.

Method of Data Analysis

Data collected through the questionnaire were analysed using frequency counts, percentages, mean and standard deviation. The Pearson's Product Moment Correlation coefficient was used to analyse hypotheses 1 and 2. The research hypotheses were tested at 0.05 level of significance.

RESULTS AND DISCUSSION

This section presents the result of the study in tables in line with the research questions and hypotheses earlier formulated to guide the study

Institutional Distribution of Respondents

Table 4: Frequency distribution of respondents by institution

Institution	Frequency	Percentage (%)
Federal University of Abeokuta	39	18.1
Christopher University	7	3.3
Chrisland University	3	1.4
Crescent University	9	4.2
Olabisi Onabanjo University	49	22.8
Babcock University	31	14.4
Tai-Solarin University	20	9.3
Bells University	17	7.9
Covenant University	40	18.6
TOTAL	215	100.0

Source: Field survey, 2022

The distribution of respondents by institution as presented on Table 5 shows that 39(18.1%) of the respondents are from the Federal University of Abeokuta, 7(3.3%) are from Christopher University, 3(1.4%) from Chrisland University, 9(4.2%) from Crescent University, 49(22.8%) from Olabisi Onabanjo University, 31(14.4%) from Babcock University, 20(9.3%) works at Tai-Solarin University, 17(7.9%) from Bells University and 40(18.6%) are from Covenant University. The result indicates that Olabisi Onabanjo University (OOU) has the highest number of respondents in this study 22.8%. This may be due to the fact that Olabisi Onabanjo University (OOU) is the oldest state owned university among the studied university libraries.

Data analysis based on Research Questions

Electronic Information Resources Available in the University Libraries.

Respondents were asked to indicate the electronic information resources available to users in the various university libraries in Ogun State, such as E-journals, reference services, online public access catalogue, E-book, electronic database among others. The finding of this study as reported on Table 9 above revealed that, E-journals ($\bar{x} = 1.95$) was the most available item, closely followed by online public access catalogue ($\bar{x} = 1.93$) and E-books ($\bar{x} = 1.85$) (Access to Research for Development and Innovation(ARDI) ($\bar{x} = 1.60$) was the least available EIR in the selected universities.

Table 9 Electronic Information Resources Available in the University Libraries

S/N	Electronics Information Resources	Available	Not Available	\bar{x}	S.D
1	E-journals	205 (95.3%)	10 (4.7%)	1.95	0.21
2	Online public access catalogue	201 (93.5%)	14 (6.5%)	1.93	0.25
3	E-books	183 (85.1%)	32 (14.9%)	1.85	0.36
4	Agora	176 (81.9%)	39 (18.1%)	1.82	0.39
5	E-bulletins	171 (79.5%)	44 (20.5%)	1.80	0.40
6	E-magazines	167 (77.7%)	48 (22.3%)	1.78	0.42
7	Ebscohost	165 (76.7%)	50 (23.3%)	1.77	0.42
8	Science direct	161 (74.9%)	54 (25.1%)	1.75	0.43
9	Hinari	156 (72.6%)	59 (27.4%)	1.73	0.45
10	Oare	141 (65.6%)	74 (34.4%)	1.66	0.48
11	Goali	136 (63.3%)	79 (36.7%)	1.63	0.48
12	TEEAL	131 (60.9%)	84 (39.1%)	1.61	0.47
13	Ardi(Access to Research for Development and Innovation)	130 (60.5%)	85 (39.5%)	1.60	0.48

Weighted mean = 1.76

Source: Field survey, 2022

Using the weighted mean of 1.76 as the benchmark, the inference drawn from these findings was that E-journals, online public access catalogue, E-books AGORA, E-bulletins and Ebscohost were the most available electronic information resources in the selected university libraries of study. This finding is in congruence with the findings of Emmasiegbu and Anaehobi (2021) when they studied the use and availability of library electronic information resources (EIR) by academic staff at the Federal University of Agriculture, Abeokuta, Ogun State, Nigeria. The study shows that the available and most used e-resources were TEEAL, AGORA, e-granary and HINARI.

Digital Preservation Skills Possessed by Library Personnel

Table 10 Digital preservation skills possessed by library personnel in the study

S/N	Items	HS	AS	LS	NS	\bar{x}	S.D
1	Managerial skill	71 33.0 %	95 44.2 %	23 10.7%	26 12.1%	2.98	0.96
2	Laminating skill	69 32.1 %	93 43.3 %	24 11.2%	29 13.5%	2.94	0.99
3	Encapsulation skill	45 20.9 %	136 63.3 %	11 5.1%	23 10.7%	2.94	0.83
4	Emulation skill	47 21.9 %	135 62.8 %	7 3.3%	26 12.1%	2.94	0.86
5	Transformation skill	57 26.5 %	107 49.8 %	26 12.1%	25 11.6%	2.91	0.92
6	Migrating skill	54 25.1 %	105 48.8 %	30 14.0%	56 12.1%	2.87	0.93
7	Refreshing skill	53 24.7 %	108 50.2 %	22 10.2%	32 14.9%	2.85	0.96
8	Replicating skill	50 23.3 %	100 46.5 %	50 23.3%	33 15.3%	2.78	0.97

Key: Highly skilled, Average skilled, Lowly skilled, Not skilled

Source: Field Survey 2022

In table 10 respondents were asked to indicate the electronic Information resources preservation skills they possessed. The EIRs preservation skills possessed mostly by library personnel was Managerial skill as indicated by ($\bar{x} = 2.98$) of the respondents. This ranked highest by the mean score rating as the major skill possessed by library personnel and was followed by Communication skill ($\bar{x} = 2.94$) and Transformation skill ($\bar{x} = 2.91$). However, the least preservation skills possessed as indicated by library personnel was encapsulation skill ($\bar{x} = 2.94$).

Using the weighted mean of 2.90 as the benchmark, the inference drawn from this finding was that managerial skills, communication skill, encapsulation skill, emulation skill and transformation skills were the most possessed preservation skills employed by the library personnel of the selected libraries. This finding is in agreement with Haleem, Javaid, Qadri and Suman (2022) and Deegan and Tanner (2018) who stressed that, most library personnel in developing countries apart from having low ICT skills also lack skills in digital preservation. Also Kalusopa, Mosweu and Bayane (2021) indicated that there is a constant need to upgrade ICTs' staff skills in order for them to keep up with technological changes.

Test of Hypotheses

H01: There is no significant relationship between library personnel's digital preservation skills, and management of electronic information resources in selected university libraries in Ogun State.

Table 11: Pearson Product Moment Correlation (PPMC) showing the relationship between Library personnel preservation skills and Management of Electronic Information Resources

Variables	Mean	Std. Dev.	N	R	p-value	Remarks
Personnel preservation skills	23.2140	5.0817	215	.496*	.000	Sig.
EIR management strategies	24.4419	4.9874				

* Sig. at 0.05 level

Source: Field Survey 2022

Table 11 shows that there is a significant relationship between library personnel preservation skills and management strategies of electronic information resources in university libraries in Ogun State ($r = .496$, $n = 215$, $p(.000) < .05$). Hence, it could be deduced that personnel preservation skills and strategies have the tendency to improve positively, enhance and influence Electronic Information Resources Management in the university libraries studied.

Thus, the hypothesis is rejected. This finding was in agreement with Lefuwa (2008) who reported that information professionals should have experience in all areas of EIRs' processing and handling that for this reason, one should develop a schedule of service that will attract and retain the skilled information professionals who are available in the field.

H02: There is no significant relationship between digital preservation strategies, and management of electronic information resources by library personnel of selected university libraries in Ogun State.

Table 12: Pearson Product Moment Correlation (PPMC) showing the relationship between library personnel preservation strategies and management of electronic information resources

Variables	Mean	Std. Dev.	N	r	p-value	Remarks
Personnel preservation strategies	27.0279	6.1446	215	.597*	.000	Sig.
EIR management	24.4419	4.9874				

Sig. at 0.05

Source: Field Survey 2022

Table 12 shows that there is a significant relationship between preservation strategies and management of electronic information resources by library personnel of university libraries in Ogun State ($r = .597$, $n = 215$, $p (.000) < .05$). Hence, it could be deduced that preservation strategies improve EIR management in the university libraries studied.

Hence, the hypothesis is rejected.

This result is in consonance with Patil, (2018) explained that the following strategies are needed when handling a media storage device for preserving information are moderating and making temperature and humidity stable helps keep storage alive.

FINDINGS

1. The electronic information resources mostly available in the selected universities in Ogun State are E-journals, Online public access catalogue, E-books, AGORA, E-bulletins and Ebscohost.
2. The digital preservation skills possessed mostly by library personnel as indicated by a higher percentage of them were managerial skill, communication skill, encapsulation skill and emulation skill.
3. Library personnel's digital preservation skills positively influenced management of EIR in universities libraries in Ogun State.
4. Library personnel's digital preservation strategies positively influenced management of electronic information resources in university libraries in Ogun State.

CONCLUSION

This study revealed that digital preservation skills have great influence on the management of electronics information resources in universities libraries and that, electronic information resources were available in the selected universities libraries and that, the electronic information resources commonly found in all the selected university were E-journals, online public access catalogue, E-books, AGORA, E-bulletins, E-magazines, Ebscohost, Science direct and TEEAL in the selected University.

Recommendations

Consequent upon the other findings of the study, the following recommendations are made:

- University libraries should always orientate and evaluate their library personnel based on the available electronic information resources EIRs to ensure the long span of these EIRs.
- The parent institutions and library management should provide conducive environment, training and retraining of library personnel on relevant digital preservation skills for example managerial skill, communication skill, encapsulation skill and emulation skill.
- The government and the universities should create awareness or organise seminars, workshops, conferences for training and retraining of library personnel on preservation skills for the management of electronic information resources which recorded low percentages, this will enable them to have adequate knowledge on preservation and management of EIRs.
- Very few library personnel are conversant with digital preservation skills and strategies on EIRs management, thus militating against any comprehensive preservation programme. There is need to improve on electronic information resources in libraries, orientation for staff, library routine activity, and staff training and retraining on preservation and management, positive attitudes towards preservation and conservation among many others are necessary.

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