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Managing Electronic Collection Resources (ECRs): Nigerian University Libraries Perspective

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Abstract
One of the major concerns of academic libraries is how to manage their electronic collection resources (ECRs) for easy access to lecturers, students and research fellows. It is worthy of note that no previous studies have been conducted in university libraries in Nigeria vis-à-vis the three managerial protocols of electronic collection resources assessed in this study. The study employed descriptive survey design with data collecting instruments made of questionnaire and semi-structured interview schedule to elicit responses from the library staff respondents. Frequencies, means and standard deviations were the descriptive statistical indices used in presenting the data for this study. Independent sample t-test was used to test the three null hypotheses at the probability of 0.05 level of significance. The mean responses of the librarians and para-professionals respondents on planning practices for ECRs did not differ significantly (P > 0.05). There was no significant (P > 0.05) difference in the mean responses of librarians and para-professionals with regards to the staffing provisions for ECRs. The study did not observe any significant (P > 0.05) difference in the mean responses of the two categories of library staff respondents with regards to the preservation practices employed for ECRs. It is anticipated that if sound and efficient managerial protocols for ECRs are put in place in Nigerian University libraries, lecturers, students and research fellows will afford themselves the opportunity to access the desired electronic information materials for their research work.

Keywords:
Management, Electronic collection resources, Librarians, Para-professionals, Lecturers, Postgraduate students

Introduction

University library services in developing countries such as Nigeria have changed drastically ever since Information and Communication Technology (ICT) was introduced in all walks of life. This new technology has helped the librarians and other library supportive staff to efficiently organize and manage electronic collection resources. The term electronic resources represent an increasingly important component of the collection building and management practices in university libraries (Sharon et al., 2012) and this is considered as an essential element of the information life cycle (Khan & Bhatti, 2016). The Internet and World Wide Web (WWW) have

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helped to facilitate electronic publishing and dissemination of electronic information resources (Sinha, 2014) to end users. In support of this development, academic libraries and librarians are grappled with serious challenge vis-à-vis the handling and management of electronic collection resources in universities and other tertiary institutions. Glitches in ICT facilities or equipment used in managing electronic resources in academic libraries will always prevent lecturers, students and researchers from accessing the desired electronic information for their teaching, learning and research work. Electronic collection resources range from online journals, databases, electronic manuscripts, electronic books, electronic theses, electronic data archives, bibliographic databases, etc. (Winifred et al., 2021).

It is worthy of note that management entails the process of planning, organizing, leading and controlling an established business activity or a departmental function towards achieving a desired objective (Wickremasinghe, 2003). The academic librarians are saddled with the responsibility of managing electronic resources in university libraries by adequate planning, organization and good leadership and control of the resources (Lussier, 2003) to satisfy the information needs of the teeming population of lecturers, students and researchers. This author asserts that the four functions of management are not only interrelated but are always seen to be working at the same time in any establishment such as academic library. In other words, this same author viewed management as a system process which embraces the functions of planning, organization, leading and controlling.

Academic libraries place high premium in providing electronic collection resources and other efficient services to their clientele (Higgin, 2017). Managing electronic resources in academic libraries is a herculean task that requires adequate funding (Winifred et al., 2021). Some notable researchers have carried out studies in some areas of managing electronic resources such as funding (Elguinde & Schmidt, 2012) and staffing (Abrams, 2015; Harnett, 2014). In a special issue titled "The Acquisition Librarian" edited by Su (2007), preservation procedures of electronic collection resources as well as budgeting, staff reluctance and copyright issues were effectively discussed. The work of Branscome (2013) in the United States of America on online survey of electronic serials management is another notable example of work on managing electronic collection resources in academic libraries. This particular study assesses academic librarians and centered on important issues about technical services, importance of electronic serials on collection development, library staffing procedures and the management tools used in the serials section of the library. The study revealed different types of electronic resources management practices and the findings go to show that management of electronic collections resources varies from one institution library to another. It is never a stereotype management system or function. The present study was set out to assess some managerial protocols such as planning practices, staffing provisions and preservation practices for electronic collection resources in ten public university libraries in South East, Nigeria.

Statement of the Problem

One of the important functions of an academic library in this digital age is to manage her electronic collection resources efficiently for easy access to lecturers, students and research fellows.

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Librarians and para-professionals working in university libraries are meant to fashion out best practices on how to manage the available electronic collection resources in their libraries to satisfy the desired information needs of lecturers, students and research fellows. Management of electronic collection resources varies from one academic library to another in Nigerian universities. Some of the university libraries in Nigeria have unique and valuable electronic collections which cannot be easily accessed by their teeming population of users. The National Universities Commission (NUC), Nigerian Library Association (NLA), International Federation of Library Association (IFLA), Commonwealth Library Association (COMLA), International Association of School Librarianship (IASL) and other educational/library agencies have always stressed the importance of academic libraries in providing their users with creative and useful services such as virtual reference services, availability of metadata, provision of electronic books and journals, etc. So far, the efforts of these agencies are not yielding the desired results vis-à-vis proper management of electronic collection resources in Nigerian university libraries. The situation has led to poor and inadequate information service delivery to undergraduate and postgraduate students, lecturers and research fellows thereby taking a great toll on research activities in Nigerian universities. In the light of this development and the paucity of information on how electronic collection resources are managed in these libraries, the present study tries to assess some of the managerial protocols of electronic collection resources in ten public university libraries in South East, Nigeria. These managerial protocols include: planning practices of ECRs, staffing provisions for ECRs and preservation practices employed for ECRs.

Objectives of the Study

The main objective of the present study was to assess three important managerial protocols of electronic collection resources in ten university libraries in Nigeria.

The specific objectives of the study were to:

- Determine the planning practices for electronic collection resources in public university libraries in South East, Nigeria.
- Determine the staffing provisions for electronic collection resources in public university libraries in South East, Nigeria.
- Determine the preservation practices employed for electronic collection resources in public university libraries in South East, Nigeria.

Research Questions

Three research questions were formulated to be answered by this study:

1. What planning practices do public university libraries in South East, Nigeria employ for electronic collection resources?
2. What are the staffing provisions made by public university libraries in South East, Nigeria for electronic collection resources?

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3. What are the preservation practices employed for electronic collection resources in public university libraries in South East, Nigeria?

The three hypotheses formulated for the study were tested at 0.05 level of significance.

Ho_1 There is no significant ($p > 0.05$) difference in the mean responses of librarians and para-professionals with regards to the planning practices for electronic collection resources in public university libraries in South East, Nigeria.

Ho_2 There is no significant ($p > 0.05$) difference in the mean responses of librarians and para professionals with regards to the staffing provisions for electronic collection resources in public university libraries in South East, Nigeria.

Ho_3 There is no significant ($p > 0.05$) difference in the mean responses of librarians and para-professionals with regards to the preservation practices or procedures of electronic collection resources in public university libraries in South East, Nigeria.

Literature review

Several authors (Wickremasinghe, 2003; Lussier, 2003) have defined management from the concept of objectives and functions of management. According to Lussier, the four indices of management (planning, organization, leadership and control) are not only interrelated but also closely associated or connected. Management per se in any organization or establishment such as academic library revolves around planning, organizing, leading and controlling. None of the four functions works in isolation.

University libraries follow their plan schedule to achieve their desired goals. Strategic planning technique in academic libraries attempts to look into the future and to assess the changes that might come with it. Authors like Akporhonor (2005) and Ondari-Okemwa (2000) had looked at planning in academic libraries from the angle of budget, consortium and collection development and management. These authors in their respective studies posited that planning being a problem solving process is also capable of creating problems on its own.

Some researchers (Hodgetts, 1998; Lussier, 2003; Hellriegel, 1996; Griffin, 1987) in their studies have considered organization in areas of departmentalization, unity of command, unity of direction, span of control and delegation. The university librarians are the Chief Executive Officers (CEO) in academic libraries who are responsible to provide leadership to other professional librarians and para-professionals. The workflow in academic libraries follows a decent order of hierarchy as follows: University Librarian (UL), Deputy University Librarian (DUL), Faculty Librarian, Departmental Librarian, Assistant Librarian, and Junior Librarian.

Leadership in an establishment like the university library is seen as an interpersonal influence aimed at achieving some goals (Allen, 1998). According to Kotter (1990), a leader strives to influence more than one person in any establishment or organization. Policy making in academic libraries requires efficiency in library management that will be capable to make recommendations

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to professional librarians and para-professionals vis-à-vis standards, technology, ICT options, feasibility and training schedule (Tlou & Patrick, 2019).

Managerial control in a standard academic library depicts variety of actions taken by library management to ensure that the behavior and performance of library staff (librarians and para-professionals) conform to a great extent to the lay down principles or plans. The work of Basteman and Zeithamal (1993) posited that controlling function of the library involves monitoring the progress of the library towards her goals and taking cognizance of any challenges. Controlling per se is seen in all parts of an organization and its activities. Controlling helps in finding solutions to management and operational problems as well as in achieving planning for organizational objectives (Malan, 1989). Management style in an organization or library is influenced by the characteristics of the local environment and the people.

Every organization tries to achieve her best through adequate and proper management practices. According to Ejigbo (2015), management is the act of galvanizing or getting people together to achieve or accomplish desirable goals. It can also be viewed as the organization and coordination of business activities for optimum benefits. Management involves planning, organizing, resourcing, directing, and controlling an organization, institution (eg academic library) for the purpose of accomplishing the set objectives (Ejigbo, 2015).

In the present study, management can be looked at as ways or methods by which academic libraries can achieve efficient electronic management practices with the available human and information resources. Making policies in academic libraries require efficient leadership in library management that will always make recommendations to staff about standards, technology options, feasibility and training (TIou & Patrick, 2019). Corrado and Moulaison (2014) revealed that management involves making policies, documentation and provision of resources (human resources and financial resources). Again, in the context of the present study, management of electronic resources in academic libraries points to the process that has to do with planning, organizing, creating, maintaining, stimulating, controlling and unifying electronic information resources for easy access to teeming population of lecturers, students and other researchers.

Research Methodology

The study adopted the descriptive survey design which tries to identify the characteristics of a defined population with respect to specific variables. The study was conducted in ten university libraries across five states, comprising Abia, Anambra, Ebonyi, Enugu and Imo States in South East Nigeria. The total population for this study comprised all the four hundred and twenty-eight (428) librarians and para-professionals working in the ten studied university libraries. These university libraries include: Michael Okpara University of Agriculture, Umudike (MOUAU) Library (Abia State), Abia State University (ABSU) Library (Abia State); Nnamdi Azikiwe University Library (Anambra State), Chukwuemeka Odumegwu Ojukwu University Library (Anambra State); Alex Ekwueme Federal University Library, Ndufu-Alike (AE-FUNAI) (Ebonyi State), Ebonyi State University (EBSU) Library (Ebonyi State); Nnamdi Azikiwe Library (University of Nigeria, Nsukka) (Enugu State), Enugu State University of Technology (ESUT)

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Library (Enugu State); Federal University of Technology Owerri (FUTO) Library (Imo State) and Imo State University (IMSU) Library (Imo State) (Table 1). Below is the sample size distribution for the 10 institution libraries, calculated using the formula: SZ = N/P x S.

Table 1: The ten university libraries with number of librarians and para-professionals

S/N	Name of University Library	Ownership	Number of Librarians	Number of Para-professionals
1	MOUAU Library	Federal	23	14
2	ABSU Library	State	8	4
3	Nnamdi Azikiwe University Library	Federal	23	29
4	Chukwu Emeka Odumegwu Ojukwu University Library	State	5	5
5	AE-FUNAI Library (Alex Ekwueme Federal University Library, Ndufu-Alike)	Federal	5	11
6	Ebonyi State University Library (EBSU)	State	14	4
7	Nnamdi Azikiwe Library (University of Nigeria, Nsukka)	Federal	54	56
8	Enugu State University of Technology Library (ESUT)	State	7	31
9	Federal University of Technology, Owerri Library (FUTO)	Federal	32	41
10	Imo State University Library (IMSU)	State	12	7

Total Sample Size (S) = 385

The sample size (S) for this study was 385 which was calculated using Taro Yamen's formula (1973) as cited by Okwo et al., 2016). Taro yamen's formula is given as: $n = N/1 + N (e)^2$

Where: n = Sample Size

N = Population Size of the Study

e = Level of significance (allowable error)

1 = Theoretical constant

In this study, N = 428, e = 0.0161, 1= the theoretical constant.. If you substitute these figures in the above equation, you have $n = 428/1 + 428 (0, 0161)^2$. Therefore, n (Sample size) = 385 which also represents 90% of the total population size of 428 (Mole, 2019). According to Mole (2019),

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the larger the population, the smaller the percentage sample fraction to be selected and the smaller the population, the larger the percentage sample size. Proportionate stratified sampling technique was employed to get the number of librarians and para-professionals sampled from each of the ten studied university libraries using the formula: SZ = N/P x S, where SZ is the sample size of librarians/para-professionals working in each of the ten studied university libraries sampled (Nworgu, 2016). The letter N is the population of librarians/para-professionals in each university library. The letter P denotes the total population size of librarians and para-professionals in the ten studied university libraries while the letter S stands for the total sample size of the study.

Questionnaire and semi-structured interview schedule were the instruments used in collecting data for this study. Simple random sampling technique was employed in administering the questionnaire to the different library respondents (librarians and para-professionals). The researcher with the assistance of two librarians from each of the ten university libraries administered the questionnaire to the librarians and para-professionals. Three (3) questions were raised for the semi-structured interview schedule using the research questions as guides. Spaces were provided after each interview question where the interviewees (the cataloguing librarian, electronic reference librarian, acquisition librarian and digital librarian) in the institution libraries under study provided their answers or responses.

The three research questions were answered using frequencies, means and standard deviations. Any item with a mean range of 3.5-4.0 was considered strongly agreed (SA), highly provided (HP) or very highly employed (VHE). Items with mean range of 2.50-3.49 were considered as agreed (A), provided (P) or highly employed (HE). Means that range between 1.50-2.49 were interpreted as disagreed (D), less provided (LP) or moderately employed (ME) while items with mean range of 0.50-1.49 were considered as strongly disagreed (SD), not provided (NP) or not employed (NE). Independent sample t-test was used to test the three null hypotheses at the probability of 0.05 level of significance.

Results

Findings obtained from the research questions and hypotheses

Research question 1: What planning practices do public university libraries in South East, Nigeria employ for electronic collection resources?

Table 2: Mean ratings and SD on planning practices employed by public university libraries in South East, Nigeria for electronic collection resources (n = 330)

S.N	Items to choose from	SA	A	D	SD	Mean ±SD	Rank	Decision
1	The university library management putting modalities in place for accessing funds from the State and Federal government.	116	210	4	0	3.34±0.5	1	A

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2	Planning for WAN (Wide Area Network) connection for accessing publications from local/university based authors	147	145	35	3	3.32±0.7	2	A
3	Planning on how to fully computerize the university library	149	136	38	7	3.29±0.75	3	A
4	The acquisition unit being provided with strong Internet connectivity to link up with publishers in Nigeria and outside Nigeria	124	166	40	0	3.25±0.66	4	A
5	Planning for LAN (Local Area Network) connection in all areas of the University	109	194	27	0	3.25±0.59	4	A
6	Having relevant and appropriate containers or medium for preservation and storage of information resources	140	129	61	0	3.24±0.74	6	A
7	Planning for training and exposure of librarians and para-professionals in modern library techniques	148	117	49	16	3.2±0.87	7	A
8	Planning for the availability of wireless Internet connectivity in the library	101	187	42	0	3.18±0.63	8	A
9	Arranging for the university library management to always subscribe to e-resources (online journals/books, indexing databases,	101	183	44	2	3.16±0.66	9	A

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	Full-text databases) from major publishers worldwide							
10	Planning for selection of quality and relevant electronic resources	123	144	51	12	3.15±0.81	10	A
11	Putting in place access agreement to electronic resources for users	117	147	64	2	3.15±0.74	10	A
12	Planning for a robust Internet connectivity in the library	104	167	59	0	3.14±0.69	12	A
13	Arranging for Teleconference	56	258	16	0	3.12±0.45	13	A
14	Use of online publishers' catalogue	91	182	57	0	3.1±0.66	14	A
15	Making sure there is a good electronic information delivery and electronic reference	106	154	58	12	3.07±0.8	15	A
16	Employing trained library professionals (librarians) and paraprofessionals	107	144	67	12	3.05±0.82	16	A
17	Planning for the University library to have a robust and efficient management policy.	58	224	48	0	3.03±0.57	17	A
18	Procurement of modern library tools and equipment for electronic management	91	179	31	29	3.01±0.85	18	A
19	Provision and use of Online Public Access Catalogue (OPAC)	67	201	43	19	2.96±0.75	19	A
20	Making effort to surmount constant power outage in the library	95	148	62	25	2.95±0.88	20	A

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21	Putting in place formal electronic collection management polices	89	147	78	16	2.94±0.84	21	A
22	Provision of enough computers and their accessories for electronic collection management staff	85	147	76	22	2.89±0.86	22	A
23	Planning and considering appropriate web resources for collection	98	117	61	54	2.78±1.05	23	A

Keys: SA = Strongly Agreed, A = Agreed, D = Disagreed, SD = Strongly Disagreed, SD = Standard Deviation

Table 2 reveals that all the items on planning practices employed by public university libraries for electronic collection resources have mean scores that ranged from 2.78 to 3.34. Only four items attracted mean scores that ranged between 2.78 to 2.96. The highest mean score value of 3.34 stood for the item "The University library management putting modalities in place for accessing funds from the State and Federal Government". The item that reads "Planning and considering appropriate web resources for collection" attracted the lowest mean score of 2.78.

The first question for the interviewees was to know the planning practices their university libraries have adopted for electronic collection resources. Answers provided by the interviewees are as follows: "Provision of good Internet connectivity/availability of wireless Internet connectivity in the library", "Planning for Online Publishers Catalogue", "Planning on how to fully computerize the library", "Planning for selection of quality and relevant electronic resources", "Provision of quality electronic information", "Plan for constant renewal of subscription databases", "Planning for the provision of LAN (Local Area Network) to access the library repositories and "Planning for the establishment of digital library services division for improve access provision to electronic resources". The planning procedures employed for electronic collection enumerated by the interviewees are in line with what the librarians and para-professionals identified as the planning procedures employed for electronic collection resources in Public University libraries in South East, Nigeria.

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Hypothesis 1: There is no significant (P > 0.05) difference in the mean responses of librarians and para-professionals with regards to the planning procedures employed for electronic collection resources in public university libraries in South East, Nigeria.

Table 3: Independent t-test on the planning procedures employed for electronic collection resources in public university libraries in South East Nigeria

Professional librarians	Para-professionals	t-test value	P-value	Remark
3.10±.47	3.120±.51	0.400	0.689	Accept

The results of the t-test in Table 3 did not provide sufficient evidence to reject the null hypothesis since the p-value of the t-test is 0.689, which is greater than 0.05. Based on this reason, the study concludes that the mean responses of librarians and para-professionals respondents did not differ on the planning procedures employed for electronic collection resources in the public university libraries in South East, Nigeria.

Research question 2: What are the staffing provisions made by public university libraries in South East, Nigeria for electronic collections resources?

Table 4: Mean ratings and SD on staffing provisions made for electronic collection resources in public university libraries in South East, Nigeria (n = 330)

S/N	Items to choose from	HP	P	LP	NP	Mean±SD	Rank	Decision
1	Online Public Access Catalogue (OPAC) librarians	101	202	27	0	3.22±0.58	1	P
2	Librarians who always collaborate with personnel from departments and faculties of other universities	108	161	59	2	3.14±0.72	2	P
3	Online indexing and abstracting librarians	101	170	57	2	3.12±0.7	3	P
4	Partnership between the university library personnel and the university computing centre	72	218	38	2	3.09±0.59	4	P
5	Online information retrieval librarians	98	157	75	0	3.07±0.72	5	P
6	Recruitment of Competent digital librarians	55	231	42	2	3.03±0.56	6	P
7	Computing para-professional library staff	105	135	81	9	3.02±0.82	7	P
8	Librarians who are competent in area of video conferencing	94	132	104	0	2.97±0.78	8	P

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9	Employing Library computer technologists	81	156	93	0	2.96±0.73	9	P
10	Recruitment of Media technologists	86	123	114	7	2.87±0.82	10	P
11	Recruitment of Competent ICT staff	96	92	138	4	2.85±0.86	11	P
12	Language resource-support specialist librarians	72	140	108	10	2.83±0.8	12	P
13	Writing and tutoring specialist librarians	84	66	171	9	2.68±0.88	13	P
14	Media resources specialist librarians	65	85	171	9	2.62±0.83	14	P

Keys: HP = Highly provided, P = Provided, LP = Less provided, NP = Not provided, SD = Standard Deviation

Table 4 shows the mean score values that range between 2.62 to 3.22 for the different staffing provisions made for electronic collection resources in public university libraries in South East, Nigeria. "Online Public Access Catalogue (OPAC) librarians" has a mean value of 3.22 (the highest mean score) while "Media resources specialist librarians" has a mean value of 2.62 (the lowest mean score).

The second question solicited the interviewees to comment on the staffing provisions that their university libraries have made over the years for electronic collection resources. The interviewees provided the following answers: "Recruitment of competent ICT staff", "Recruitment of Online information retrieval librarians", "Recruitment competent OPAC librarians" and "Recruitment of computing para-professionals". Two interviewees reported that their University libraries have not been recruiting staff all this while." Recruitment of competent OPAC librarians", "Recruitment of competent ICT staff" and "Recruitment of Online information retrieval librarians" are part of the staffing provisions for electronic collections identified by librarians and para-professional respondents in the libraries. Again, the views of the interviewees on staffing provision for electronic collection are in consonance with the opinion of the two categories of respondents in research question 2.

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Hypothesis 2: There is no significant (P > 0.05) difference in the mean responses of librarians and para-professionals with regards to the staffing provisions for electronic collections in public university libraries in South East, Nigeria.

Table 5: Independent t-test on staffing provisions made for electronic collection resources in public university libraries in South East, Nigeria

Professional librarians	Para-professionals	t-test value	P-value	Remark
3.08±0.68	3.070±.71	0.018	0.986	Accept

The results of the independent t-test in Table 5 did not provide sufficient evidence to reject the null hypothesis since the p-value of the t-test is 0.986, which is greater than 0.05. For this reasons, the study concludes that the mean responses of the librarians and para-professionals respondents did not differ on the staffing provisions for electronic collection resources in the Public University libraries in South East, Nigeria.

Research question 3: What are the preservation practices employed for electronic collections in public university libraries in South East, Nigeria?

Table 6: Mean ratings and SD on preservation practices for electronic collection resources in public university libraries in South East, Nigeria (n = 330)

S/N	Items to choose from	VHE	HE	ME	NE	Mean±SD	Rank	Decision
1	Migration preservation practice (moving a digital or electronic product or resource from one version of a programme, operating or hardware environment to another over time)	67	211	36	16	3.09±0.71	1	HE
2	Born digital preservation practice (where electronic information materials are created in bits and bytes)	87	193	42	8	3.08±0.69	2	HE
3	Recapturing preservation practice (copying the content from the original resource or version to ensure that the changes made to the resources are reflected in the archival version)	122	142	35	31	3.08±0.92	2	HE
4	Preservation practice of training necessary technical	76	220	18	16	3.01±0.69	4	HE

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	staff to handle and manage information resources (IR).							
5	Digital or electronic preservation policy practice	60	223	37	10	3.00±0.65	5	HE
6	Long-term access preservation practice (using a preserved object or material long after the initial preservation)	72	190	52	16	2.96±0.76	6	HE
7	Digital or electronic preservation practice (here the bits and bytes are safe and remain unaltered for long)	51	244	4	31	2.95±0.74	7	HE
8	Digital or electronic archiving preservation practice (where electronic information is preserved for long term process)	88	139	78	25	2.88±0.89	8	HE
9	Refreshing preservation practice (moving an electronic object or material to a instance of the same media)	67	163	84	16	2.85±0.79	9	HE
10	Digitization preservation practice (here materials in non digital form eg theses, dissertations, project reports are converted to digital or electronic forms)	76	134	96	24	2.79±0.88	10	HE
11	Emulation preservation practice (recreating the environment of the old hardware and software for reuse)	61	144	109	16	2.76±0.81	11	HE
12	DSPACE (Digital signal processing and control engineering) software preservation practice	46	151	117	16	2.69±0.77	12	HE

Keys: VHE = Very highly Employed, HE = Highly Employed, ME = Moderately Employed, NE = Not Employed, SD = Standard Deviation

The librarians and para-professionals respondents identified all the twelve items in Table 6 as important preservation practices that should be employed for electronic collections in public university libraries in South East, Nigeria. Results show "Migration preservation practice (3.09)",

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"Born digital preservation practice (3.08)", Recapturing preservation practice (3.08)","Preservation practice of training necessary technical staff to handle and manage information resources (IR) (3.01)" and "Digital or electronic preservation policy practice (3.00)" as the top five identified preservation practices for electronic collections.

The third question was designed to know from the interviewees how their different University libraries preserve their electronic collection resources to make for easy access to lecturers, students and researchers who use these materials for their research activities. The interviewees were able to provide the following answers as important preservation practices employed for electronic collection resources in Public University libraries in South East, Nigeria: "Making use of recapturing preservation practices", "Making use of D-SPACE software preservation practice", "Making use of digital preservation practice", "Training of preservation staff on how to handle and manage electronic information resources", "Preserving some of the valuable electronic resources in CD-ROM (Compact Disc Read Only Memory)", "Installing antivirus software in the computer systems", "Making use of migration preservation method", "Discouraging students, lecturers, and researchers from using flash drives on library computers for fear of virus contamination", "Preservation of electronic resources such as undergraduate projects and postgraduate dissertations and theses can be done by digitization", "By adopting the option of long term access preservation practice" and "By ensuring that there is conducive environmental room temperature in the sections of the library where It devices for preserving electronic resources are kept". These preservation practices identified by the interviewees are in agreement with the preservation practices identified by two categories of respondents (librarians and para-professionals) in research question 3.

Hypothesis 3: There is no significant (P > 0.05) difference in the mean responses of librarians and para-professionals with regards to the preservations practices employed for electronic collection resources in public university libraries in South East, Nigeria.

Table 7: Independent t-test on the preservation practices employed for electronic collection resources in public university libraries in South East, Nigeria.

Professional librarians	Para-professionals	t-test value	P-value	Remark
2.97±0.68	2.950±.78	0.235	0.814	Accept

The results of the independent t-test in Table 7 did not provide sufficient evidence to reject the null hypothesis since the p-value of the t-test is 0.814, which is greater than 0.05. For this reason, the study concludes that the mean responses of the librarians and the para-professionals respondents did not differ on the preservation practices or procedures for electronic collection resources in Public University libraries in South East, Nigeria.

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Discussion of the findings

From a pragmatic point of view, the present study has revealed myriads of planning practices that academic libraries in Nigeria should adopt in managing their electronic collection resources for efficient research promotion. For electronic collection resources management in any university library to be effective, there ought to be adequate planning procedures/practices (as revealed in this study) put in place by the library management. Planning per se stands out as a primary function in management practice. It involves the process of developing and analyzing the library's vision, mission, overall goals, general strategies and allocation of resources. A vision can be said to express the aspiration and value of an organization and in this case, the University Public library (Hellriegel, 1996).

Planning practices or procedures will make university libraries to take advantage of opportunities in this ever constant changing environment. Adequate planning procedures for efficient electronic collection management practice are desired in university libraries in order to attain or achieve the desired goal. Proper planning will help the library to adapt to change by identifying opportunities and avoiding problems or challenges. Good planning practices as part of library management creates enabling environment for other function of management.

The findings of this study have revealed that planning is involved in all levels of library management involving electronic collection resources. That is to say that the findings of this study are in consonance with the studies of Akporhonor (2005) and Ondari-Okemwa (2000) on planning in academic libraries which revealed that academic libraries adopted various kinds of planning practices or procedures (ranging from budget strategic planning, to other electronic collection resources management planning practices) because of such institutional constraints and inadequate resources and the need for regular performance appraisals. This is very necessary for them to continue getting support and funding from government and other agencies. The two studies also pointed out that inasmuch as planning is a problem solving process on its own, it tends to create its own problem.

The planning process for electronic collection resources management practices vary from library to library. Some libraries may have a well-developed rigid plan of managing their electronic collection resources while many other libraries may exhibit some sort of lackadaisical approach in managing their electronic resources (Piorun, 2011). Neither of these approaches is good for efficient electronic management practice (Cervone, 2009). There ought to be flexibility in the management of electronic collection resources in our university libraries. Certainly, there is bound to be conditional changes and situations will come that will make it difficult to stick to the rigid plan earlier put in place (Cervon, 2009). Whatever planning procedures that the case institution libraries in this study are adopting, there should be room for flexibility because of changing times.

The mean responses of librarians and para-professionals respondents did not vary significantly ($P > 0.05$) on the planning practices for electronic collection resources in academic libraries in South East, Nigeria (Table 3). Since the two categories of respondents have the same opinion on the

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planning procedures employed for electronic collection resources in academic libraries in South East, Nigeria, hypothesis 1 is accepted.

Staffing provision for electronic collection resources in academic libraries is a big task. Previous studies have revealed that majority of the libraries, irrespective of total staff size; have one or two professional librarians that are involved in managing electronic collection resources (Bothmann & Holmberg, 2008). Para-professionals involvements in managing electronic resources vary from library to library. Some libraries develop a team structure to meet the staffing need, delegating specific task to para-professionals (Bothmann & Holmberg, 2008). In the present study, different staffing provisions for electronic collection resources which compared with previous studies (Bothmann & Holmberg, 2008; Mi & Sullenger, 2006) were identified.

Table 5 shows that there was no significant ($P > 0.05$) difference in the mean responses of librarians and para-professionals respondents on the staffing provision for managing electronic collection resources in academic libraries in South East, Nigeria. As a result of the fact that these two categories of respondents have the same opinion on the staffing provision for managing electronic collection resources in academic libraries in South East, Nigeria, hypothesis 2 is accepted.

The identified preservation practices for electronic collection resources in this study are not far from the findings of other researchers (Chowdhury, 2010; Ramesh & Manorama, 2012) who did similar studies on the preservation practices for electronic collection resources in organizations and institution libraries. The quest to acquire and manage electronic collection resources by university libraries has grown over the years (Remesh & Manorama, 2012). This is as result of the change in the information seeking behaviour of lecturers, students and researchers who flood academic libraries on daily basis in search of vital information for their academic work.

According to Juha (2001), digital preservation practice denotes activities that revolve around management of electronic collection resources for easy and continued access to users. Preservation of electronic collection resources in university libraries in Nigeria would have been a lot easier if Information and Communication Technology (ICT) were to be stable. The technological equipment and machines for ICT always change with new innovation in science and technology. Most times, the media where electronic resources are preserved or stored may become unreadable. This may be as a result of physical damage (Juha, 2001) or virus attack to the media. Example of such media include: diskette, tape, flash drive, CDROM (Compact Disc Read Only Memory), etc. In that study by Juha (2001) titled "long-term preservation of electronic resources and the role libraries in general and metadata in particular will have in guaranteeing availability of our digital heritage for future users", a number of preservation practices or methods were described by the author which were similar to some of the ones identified in the present study which are as follows:: "Refreshing practice/method/strategy (moving a file or material or an electronic resource from one physical storage medium to another)", "Migration practice (act of moving a digital or electronic product or resource from one version of a programme to another)", "Emulation practice (here the environment of the old hardware and software is being recreated for reuse)", "Recapturing preservation practice (copying the content from the original resource or version to ensure that the

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changes made to the resources are reflected in the archival version)", "Long-term access preservation practice (using a preserved object or material long after the initial preservation)", etc.

Preservation of electronic collection resources and electronic archival materials in university libraries in developing countries of Africa (eg Nigeria) has not attracted enough attention (Thatayaone & Nathan, 2012). According to Ramokate (2006), preservation is a support function of the library, even though not totally abandoned, has generally been relegated to the background. Concurring to that assertion by Ramokate, Ngulube (2007) opined that not given that preservation is interwoven in electronic collection resources management practice; it tends to prolong the lifespan of electronic collection resources and electronic archival materials.

Table 7 shows that there was no significant ($P > 0.05$) difference in the mean responses of librarians and para-professionals respondents on preservation practices employed for electronic collection resources in public university libraries in South East, Nigeria. Since the opinion of librarians and para-professionals respondents on the preservation practices for electronic collection resources in this study did not differ significantly ($P > 0.05$), hypothesis 3 is accepted.

Conclusion

This study assessed in fuller details three managerial protocols for electronic collection resources in ten public university libraries in South East, Nigeria. Different planning practices employed for efficient electronic collection resources were identified in this study by the two categories of respondents. Librarians and other information professionals are required to make room for adequate planning practices for efficient management of their electronic collection resources. Good planning practices in managing electronic resources will not only lead to easy access but also rapid distribution of electronic information resources to students, lecturers and researchers at reduced cost. In addition the respondents in the case institution libraries were able to identify the staffing provisions that their university libraries made for electronic collection resources and some of them are: "Online information retrieval librarians", "Partnership between the university library personnel and the university computing centre", "Recruitment of competent digital librarians and Online Public Access Catalogue:", etc, This again brings to bear the importance or implication of adequate staffing provision by any academic library (universities, polytechnics and colleges of education) who wishes to embark on electronic collection resources management practice to support research activities. Finally the present study adds useful information on preservation practices/procedures for electronic collection resources in public university libraries. Some of the identified electronic preservation practices/procedures in this study are as follows: "Digitization preservation practice", "Emulation preservation practice", "DSPACE (Digital signal processing and control engineering) software preservation practice", "Migration preservation practice, etc. More effort is needed by the academic libraries in Nigeria and other developing countries to ensure that librarians and other information professionals and para-professionals adhere strictly to the different management practices for electronic collection resources for long term availability of these resources in these libraries.

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