THE USE OF ELECTRONIC INFORMATION RESOURCES IN ACADEMIC LIBRARIES IN KATSINA STATE, NIGERIA

By

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Abstract

The study investigated the use of electronic information resources in academic libraries in Katsina State. The objectives of the study were to determine the extent of use, the satisfaction derived from the use of electronic information resources and the challenges associated with the use of electronic information resources by the respondents. Quantitative methodology with cross-sectional survey design was employed to elicit data from the respondents. Questionnaire was used to collect data from the respondents. Two hundred and forty seven (247) respondents were used as sample size for the study from a population of nine thousand one hundred and seventy five (9,175) and were selected through stratified simple random sampling technique. Statistical package for social sciences (SPSS) software version 20 was used to analyze the data collected. Additionally, descriptive and inferential statistics were used in analyzing the data with tables to explain. The findings from the study revealed that majority of the respondents were using electronic information resources in their libraries. The findings further revealed that majority of the respondents indicated that they moderately use electronic information resources. Slow Internet connectivity, inadequate computers, inadequate time for searching, and inadequate searching skills by the respondents were the challenges associated with the use of electronic information resources. The

study recommends the provision of necessary and modern information and communication technology equipment such as adequate Internet bandwidth, adequate computers as well as the provision of alternative power supply to increase the use of electronic information resources is highly desirable.

Keywords: *Electronic information resources, Use, Academic libraries, Katsina State, Nigeria*

Introduction

Katsina State of Nigeria was created from the northern half of Kaduna State in 1987. Katsina is bordered by the Niger to the north and by the Nigerian states of Jigawa and Kano to the east, Kaduna to the south, and Zamfara to the west(Encyclopedia Britannica, 2020).It lies between latitudes 11°08'N and 13°22'N and longitudes 6°52'E and 9°20'E and covers an area of about 24,194 square kilometers. Katsina State has a population of 5,801,584 consisting of 2,948,279 males and 2,853,305 females, based on 2006 census final results (Katsina State Education Sector Strategic Plan, 2010).The state comprises mainly of scrub vegetation with some forested savanna in the south (Encyclopedia Britannica, 2020).The state has a substantial number of educational institutions spread across the expanse of the state.

Generally, academic libraries are found in institutions of higher learning and they provide services to members of the academic community that comprises students, lecturers, researchers etc. They are mainly established and managed by higher institutions of learning that comprises universities, polytechnics and colleges. According to Ekere and Ekere (2014) an academic library refers to a type of library that is distinct from others, such as public, national, school and others. This is because they provide information materials in different formats to support teaching learning and research activities.

Aina (2004)stressed that academic institutions are categorized mostly into two, to be precise: university and non-university institutions such as colleges of education, polytechnics, school of nursing, and others, other than secondary schools. Usually, libraries in these institutions execute functions that are directly associated to the objective of the institution they serve. Thus, academic libraries are responsible for the acquisition, organization, storage and dissemination of information in various formats, i.e. print or electronic for education, research and development.

The development in Information and Communication Technologies (ICTs) has led to the emphasis on the acquisition of electronic information resources in academic libraries. These technologies which appear in the libraries have brought about radical changes in all aspects of education, learning and research. The application of technology has led to the globalization of academic library services, which has assisted the exchange of information and ideas both locally and internationally (Huagen, 2005).

Electronic Information Resources (EIRs) are all the resources that appear in electronic format as opposed to the traditional format. They carry information resources in a computer based manner. By definition, electronic information resources are those resources stored in electronic format usually in a computer or computer related facilities such as CD-ROM, flash drives, digital libraries or even the Internet. Olasore (2015) stated that there are various types of electronic information resources which are accessible on the Internet. Some of the major ones that are popular are the electronic journals, e-books, technical specifications, reports, patents, full text articles, trade reports and others. The various kinds of e-resources are e-books, e-journals,CDs/DVDs, e-conference proceedings, databases, e-reports,e-newspaper, Internet/websites e-manuscripts, e-theses etc. These resources may be provided on CD-ROM / DVD or through the Internet. According to Margam (2010), electronic resources are information resources provided in the form of electrical signals and are typically found on a computer. They can be accessed via a personal computer, mobile device or even through mainframe computer. Electronic resources have gradually become and remain key resources in every higher institution. Electronic information resources facilitate research and play complimentary role to print library resources.

Use of EIRS simply refers to the actual practice of exploiting electronic resources. Anand (2014) noted that scholars and students use electronic resources for various purposes and usually they have access to universal information resources, mainly the Internet for their intellectual interaction. The use of electronic resources has increase with the passage of time which has gradually reduced the use of printed resources, as nowadays users preferred electronic information resources. The availability, accessibility and use of electronic information resources are indispensable to the teaching, research and community services activities of academic staff members in the Nigerian higher education system. It is against this backdrop that this study examines the use of electronic information resources in academic libraries in Katsina State through a quantitative approach.

Statement of the Problem

The advantages of electronic information resources to library users are enormous. Electronic information resources are vital tools that aid users to access, use, and exchange and share information as well as for research activities by researchers. Thus, they have the capacity of improving skills in searching of information in a rapidly changing environment. Adams, King and Hook (2010) opined that Nigerian universities seem to be backward in the overall usage of electronic resources globally despite the digital revolution in ICTs. Therefore, it is imperative to train users as well as library staff on the proper use of electronic information resources so that they may align themselves effectively on the use of these resources.

However, despite the enormous advantages of electronic information resources in learning and other similar academic endeavours as well as the widely accepted views regarding the significance and adoption of such resources in libraries, it is observed that many users of academic libraries in Katsina State may not have been exposed to electronic information resources not to even talk of making good use of them. This is in spite of the fact that various types of electronic information resources are available for use. Okorie (2012) highlighted some electronic information resources that are useful in learning and research that include among others: e-books, e-journals, CD-ROM, database, theses, dissertations, indexes and abstracts. It is however not certain whether users of academic libraries in Katsina State make use of all these types of electronic information resources properly. Meanwhile, the literature reviewed shows that little or no researches exist on the use of electronic information resources in academic libraries in Katsina State. It is in view of the above problem that the researchers seek to examine the use of electronic information resources in academic libraries in Katsina State.

Objectives of the Study

The specific objectives of this study are:

1. To determine the types of electronic information resources available in academic libraries in Katsina State;
2. To ascertain the extent of use of electronic information resources in the academic libraries;
3. To determine the level of satisfaction derived from the use of electronic information resources by the users; and

4. To determine the challenges associated with the use of electronic information resources in the academic libraries.

Hypothesis

The following null hypotheses were formulated and tested at 0.05 level of significance.

1. Ho-There is no statistically significant relationship between perceived usefulness and use of electronic information resources.
2. Ho - There is no statistically significant relationship between perceived ease of use and use of electronic information resources.

Literature Review

Electronic information resources play a significant role in the present day information access and dissemination, and utilization. They have additionally become essential in the contemporary teaching, research and learning processes, particularly in tertiary institutions of learning. Ukpebor (2012) noted that EIRs provide perfect and appropriate information specially for students at all levels and researchers who rely significantly on them for the advancement of scholarship and other similar endeavors. They also provide latest information which may not be available in print format. In view of the above, it is critical to note that EIRs are greatly changing the nature of library services in academic institutions, because they can be accessed even in remote areas and provide up to date happenings in an area or beyond.

Electronic information resources are mainly provided in electronic formats such as the Internet, CD-ROM databases, and other host of electronic networks. Consequently, the literature has shown that many academic libraries globally, are embracing EIRs to sustain teaching, learning and research processes and activities. There are many advantages of EIRs. Some of advantages, according to Shuling (2007), include quick and easy accessibility to recent information, easy storage and opportunity of sharing information resources by users at a time. They also save space and they are easy to maintain.

Various types of electronic information resources are now in existence. Such resources include e-journals, e-books, CDs/DVDs, databases, e-theses, e-newspapers among others. (Okorie, 2012).

According to Swain (2010), different kinds of electronic resources obtainable in most academic libraries comprises: e-journals, e-books,

online databases, e-theses/e-dissertations, electronic conference proceedings, electronic technical reports, electronic reference documents, CD-ROM databases. Anand (2014) in his study on the types of electronic resources identified e-books, e-journals, CD-ROM databases, indexing and abstracting databases, reference file e-thesis and e-patents as some of the most popular EIRs.

Many academic libraries have embraced EIRs for various purposes mainly for teaching, learning, and research activities. These information resources have necessarily provided access to valuable, dependable and affordable information that are current and available at any point in time, because of the paradigm shift from print resources to electronic-based resources. Similarly, Remilekun (2015) cited in Agba and Nyumba (2004) stated that the shift has provided access to these resources for improved quality and effective researches. Besides, the use of electronic information resources aids users in becoming up-to-date with recent advancements in their respective fields of studies as against the print media which are not frequently updated.

Several researches have been carried out on the use of EIRs from diverse viewpoints. For example, Elavazhagan and Udayakumar (2013) studied the degree of use of electronic information resources by the faculty members at the BITS, Pilani-Hydera bad campus, India. The study established that e- information resources are time-saving, flexible and easy to use. In the same vein, Leonard, Hamutumwa and Mnubi-Mchombu (2020), examined the use of e-resources by the Faculty of Law's academic staff at the University of Namibia through qualitative and quantitative research methods. The study found that most of the respondents were aware of the e-resources provided by the University of Namibia Library. Also, the respondents used e-resources mainly for research, publication and teaching functions. Challenges identified were irregular training, bandwidth issues and limited searching skills were the major obstacles affecting the use of electronic information resources.

Babu and Sivaraman (2020) explored the utilization of electronic information resources and services by the students of engineering colleges of Bangalore City, India through quantitative approach. The study established among others: that majority of the respondents use e-resources to download data or files for the purpose of social networking. Also, majority of the respondents devote substantial number of hours daily for accessing e-resources services. Crawford (2006) investigated the use of electronic information resources and information literacy at Glasgow Caledonian University and established that students used the

resources mainly for their academic activities, communication, current awareness and leisure. It was also found that majority of the respondents use the Internet, but e-databases were drastically underutilized. Ankrah and Atuase (2018) explored the use of electronic information resources by postgraduate students of the University of Cape Coast, Ghana through quantitative methodology. The study revealed that the majority of the postgraduate students were aware of the e-resources available in the library. Additionally, the respondents identified challenges such as poor Internet connection as the most prominen tissues affecting access to electronic information resources.

From the Nigerian context, Termenge and Kashimana (2019) investigated the availability, accessibility and use of EIRs by students of University of Makurdi, Benue State, through quantitative methodology with survey research. The findings revealed that e-journals, e-newspapers, e-magazines etc. were the available electronic information resources. Likewise, the extent of accessibility and use of the EIRs was found to be encouraging. Finally, inadequate computers, poor Internet connectivity, power outage and difficulty in havingaccess and use of electronic information resources were highlighted as the impediments affecting the use electronic information resources.

Osinulu (2020) examined the awareness and use of electronic information resources (EIR) among students of the College of Health Sciences at Olabisi Onabanjo University, Sagamu through quantitative methodology with descriptive survey design. The study found that majority of the respondents were not aware of the available EIR. It was also established that only few of the respondents were using EIR. Challenges identified by the respondents were inadequate computers, irregular power supply and slow Internet speed.

Similarly, Okiki (2012) studied electronic information resources awareness, attitude and use by academic staff of the University of Lagos through quantitative approach. The study found that the level of academic staff awareness of the subscribed electronic information resources was low. It was also established that research activities, paper writing and publication as well as teaching were the major reasons why academic staff use electronic information resources.

Methodology

Quantitative research methodology with cross-sectional survey design was adopted for the study. The population of the study was all the 9,175 users who registered with the ICT units of the libraries of 6tertiary

institutions in Katsina State, i.e. Federal University Dutsin-Ma, Federal College of Education, Katsina, Hassan Usman Katsina Polytechnic, Katsina, Katsina Institute of Technology and Management, Katsina and Isa Kaita College of Education, Dutsin-Ma. Thus, stratified random sampling was used to determine the sample size for the study. Each stratum in the population had probability of being selected randomly. A sample size of 274, out of a population of 9175 library users who had registered with the ICT units of their libraries was considered adequate with regards to Nwana (2007) formula thus:

Formula: $\frac{N \times \%}{100}$

Where N= total No. of registered users = 9175
% = 3%
100 = Constant

$\frac{9175*3\%}{100\%} = 274$

Additionally, a self-developed questionnaire was used to collect data for the study and was administered to the respondents. Descriptive statistics using frequencies and percentages with tables to explain were used in reporting the data collected from the respondents. Overall, 274 copies of the questionnaire were distributed to the respondents out of which 241 were properly filled, returned and found usable for the analysis representing 88.9% response rate, which is considered adequate for the study.

Findings of the Study

This part presents the results of the study and discussions. Every section is based on the applicable research objective that guided the study.

Table 1: Demographic Information of the Respondents

Demographic Information		
Age	**Frequency**	**Percentage%**
18-25	56	23
26-30	63	26
31-35	71	29
36-40	32	13
Above 40	19	9
Total	**241**	**100**

Demographic Information		
Gender	**Frequency**	**Percentage%**
Male	173	72
Female	68	28
Total	241	100
Programme of Study	**Frequency**	**Percentage%**
OND/NCE	107	44.4
BSC/BA	87	36.1
MA/MSC	36	14.9
PhD	11	4.6
Total	**241**	**100**

Table 1 shows the demographic information of the respondents. Based on gender, the table revealed that more than half were from the age range of 31-35 years, constituting 71 (29%), followed by 63(26%) 26-30years. The findings also show that 18-25 years constituted 56(23%) of the respondents, 36-40 years were represented by 32(13%)and above 40 years representing(19. 9%).Similarly, the data revealed that 173 (72%) of the respondents were male and 68(28%) were females. This shows that majority of the respondents who used electronic information resources in the academic libraries studied were males. Also, majority of the respondents were of the younger generation within the digital age.

In terms of programmes of study of the respondents, the data shows that107 (44.4%) were pursuing ND/NCE,87 (36.1%) were B.A/B.SC/HND students; 36 (14.9%) of the respondents were M.A/MSC students, while, 11 (4.6%) were studying for doctoratedegree. This finding indubitably implies that majority of the respondents were studying ND/NCE courses.

Use of Electronic Information Resources

The respondents were asked to indicate whether they use electronic information resources or not. The summary of the findings is presented in Table 2.

Table 2: Use of Electronic Information Resources

Use of Electronic Information Resources	**Frequency**	**Percentage**
Yes	168	69.7%
No	73	30.3%
Total	241	100%

Table 2 revealed that more than half 168 (69.7%) of the respondents indicated that they use electronic information resources; while 73 (30.3%) indicated not using them. This implies that majority of the respondents in the in tertiary institutions in KatsinaState were using electronic information resources.

Types of Electronic Information Resources Used

The respondents were asked to indicate the type of electronic information resources they mostly used in their institutions. Their responses is presented in Table 3

Table 3: Types of Electronic Resources Used

Types of Electronic Resources Used		
	Frequency	**Percentage %**
CD - ROMs	87	51.8%
E -books	142	84.5%
E - journals	91	54.2%
E - newspapers	73	43.5%
Online data base	103	61.3%
E - mail	125	74.4%
E - magazines	110	65.5%
E - conference	28	16.7%
E - reference	91	54.2%
E - dissertation	66	39.3%
E - manuscripts	34	20.2%
Others	-	-

Table 3 shows the results of the data collected and analyzed with the aim of determining the various types of electronic information resources that were used by the users. The findings shows that a significant number of the respondents indicated using e-books (142 or 84.5%), e-mails ranked next with (125 or 74.4%) respondents. This is followed by e-magazines with (110 or 65.5%) respondents; online data-basehad (103 or 61.3%). Others are e-journals (91 or 54.2%); e-reference (91 or 54.2%), CD-ROM (87 or 51.8%), e-newspaper (73or43.5%), e-dissertations (66 or 39.3%); e-manuscripts (34 or 20.2%) and e-conference (28 or (16.7%) respondents respectively. Based on the above results, it can be deduced that the respondents were aware about the existence of different types of electronic information resources in their libraries which they used accordingly.

Extent of Use of Electronic Information Resources

In this section, the respondents were asked to indicate the extent to which they use electronic information resources. The summary of their views is in Table 4.

Table 4: Extent of Use of Electronic Information Resources

Options	Frequency	Percentage %
Very Highly Use	31	18.5%
Highly Use	58	34.5%
Moderate Use	63	37.5%
Fairly use	16	9.5%
Total	168	100%

Table 4 indicates the extent of use of electronic information resources. The results shows that 63 (37.5%) of the respondents indicated moderate use of EIRs, 58(34.5%)indicated high use. Similarly, (31 or 18.5%) of the respondents indicated very highly use. The least was 16 (9.5%) of the respondents who indicated fair use of electronic information resources. This finding shows that majority of the respondents use electronic information resources moderately.

Level of Satisfaction Derived from the Use of Electronic Information Resources

With regards to satisfaction with electronic information resources, the respondents were asked to indicate their level of satisfaction with the use of electronic information resources. The summary of their responses is presented in Table5.

Table 5: Level of Satisfaction Derived from the Use of Electronic Information Resources

Level of your satisfaction	Frequency	Percentage%
High satisfaction	43	25.6%
Satisfactory	62	36.9%
Moderately satisfied	45	26.8%
Low satisfied	18	10.7%
Total	**168**	**100**

Table 5 reveals the level of satisfaction of the respondents with regards to the use of electronic information resources. The results shows

that62(36.9%) of the respondents indicated satisfactory;45(26.8%) were moderately satisfied with the e-resources. In the same vein, 43(25.6%) of the respondents indicated high satisfaction with the use of electronic information resources; while only 18(10.7%) indicated low satisfaction. One can infer from the above analysis that the level of satisfaction derived from the use of electronic information resources by the respondents was not very encouraging.

Challenges Affecting the Use of Electronic information Resources

The respondents were asked to indicate the challenges affecting the use of electronic information resources in their respective libraries. The findings are in Table 6.

Table 6: Challenges Affecting the Use of Electronic Information Resources

Challenges Affecting the Use of EIRs	**Yes**	
	Frequency	%
Erratic power supply	142	84.5
Lack of enough time for searching	133	79.2
Lack of searching skill	122	72.6
Inadequate computers system	16 6	98.8
Lack of training on the use of electronic resources	105	6 2.5
Poor Internet services	163	97 . 3
Others please specify	63	37.5

According to the findings on Table 6 regarding the challenges affecting the use of electronic information resources in tertiary institutions in Katsina State, majority 166 (98.8%) indicated inadequate computers; 163 (97.3%) of the respondents indicated poor Internet services. Similarly, 142 (84.5%) indicated erratic power supply as a challenge; 133 (79.2%) of the respondents considered limited time for searching as a challenge. In the same vein,122 (72.6%) indicated lack of searching skills. Furthermore, 105 (62.5%) indicated lack of training. Based on the findings, it can be seen that the foremost challenges affecting the use of EIRs were poor Internet connectivity, limited time for searching, erratic power supply as well as inadequate computers in the tertiary institutions studied.

Testing the Null Hypotheses

Hypothesis 1. There is no significant relationship between access and use of electronic information resources. Table7 is an analysis of correlation coefficient between access and use of electronic information resources in the academic libraries.

Table 7: Relationship between Access and Use

			Use	Access
Spearman's rho	Use	Correlation Coefficient	1.000	.365 **
		Sig. (2 - tailed)	.	.000
		N	241	241
	Access	Correlation Coefficient	.365 **	1.000
		Sig. (2 - tailed)	.000	.
		N	241	241

**. Correlation is significant at the 0.01 level (2-tailed).

Table 7 shows that there was positive and significant relationship between access and use of electronic information resources as the p-value 0.05 was greater than r-0.000. This indicates that the null hypothesis was rejected and the alternative hypothesis retained, showing that access was a significant predictor in the use of electronic resources in the academic libraries.

Hypothesis 2. There is no significant relationship between perceived usefulness/perceived ease of use and use of electronic information resources.

Table 8 is an analysis of correlation coefficient between perceived ease of use/perceived usefulness and use of electronic information resources.

		Ease of use/ _usefulness	Use
Perceived ease of use and perceived usefulness	Pearson Correlation	1	.263**
	Sig. (2-tailed)		.001
	N	241	241
Use	Pearson Correlation	.263**	1
	Sig. (2-tailed)	.001	
	N	241	241

**. Correlation is significant at the 0.01 level (2-tailed).

Table 8 shows that there was a positive and significant relationship between perceived ease of use/perceived usefulness and use of electronic resources as the p-value 0.05 was greater than r-0.000. Therefore, the null hypothesis was rejected and the alternative hypothesis retained, showing that perceived ease of use/perceived usefulness was a significant predictor in the use of electronic resources in an academic library.

Discussion of Findings

This section interpreted and discussed the results. The findings showed that the types of electronic information resources available in the libraries studied include e-books, e-journals, Ajol, e-reference data base, Agora, Hinari, Science Direct, among others. This corroborates the findings of Swain (2010), who found that various types of electronic information resources available in academic libraries were e-journals, e-books, online databases, e-theses/e-dissertations, electronic conference proceedings, electronic technical reports, electronic reference documents and CD-ROM databases. Also, Anand (2014)in his study of the types of electronic resources identified e-books, e-journals, CD-ROM databases, indexing and abstracting databases, reference database e-thesis and e-patents as some of the most popular EIRs.

On the use of electronic information resources, the results revealed that more than half of the respondents used the resources. This could be attributed to the readiness of the users to get current information or save time in learning and research activities. Moreover, the study found that less than half of the respondents were not using electronic information resources which could be due to lack of skills or interest in using them. Nonetheless, this corroborates the findings of Anand (2014), who noted that researchers and students use electronic information resources and have access to global information resources, particularly the Internet for their scholarly activities. Furthermore, Hamutumwa and Mnubi-Mchombu (2020) who examined the use of e-resources by the Faculty of Law's academic staff at the University of Namibia, and found that the academics used e-resources for research, publications and teaching purposes. Termenge and Kashimana (2019) similarly found that the extent of accessibility and use of the electronic information resources by the students of University of Makurdi, Benue State, Nigeria was found to be encouraging.

Regarding the extent of use of the electronic information resources, the findings of the research shows that less than half of the respondents

moderately used the resources which is not encouraging in all ramifications. As for the level of satisfaction derived from the use of electronic information resources, the findings of the study shows that less than half of the respondents indicated satisfaction with the EIRs in the tertiary institutions in Katsina State. However, the level of satisfaction expressed is very low, which could be attributed to some of the challenges faced in using electronic information resources.

Finally, with respect to the challenges associated with the use of electronic information resources, the results revealed that there were a lot of challenges/constraints affecting the use of electronic information resources that include among others: poor Internet services, inadequate computer systems, lack of enough time for searching, lack of searching skills, inconsistent power supply and lack of training on the effective use of the electronic resources. This is in consonance with the findings of Leonard, Hamutumwa and Mnubi-Mchombu (2020) who found that irregular training, bandwidth problems and limited searching skills constituted the challenges hindering the use of e-resources by the Faculty of Law academic staff at the University of Namibia. Likewise,Osinulu (2020) reported inadequate computers, irregular power supply and slow Internet speed as the major challenges affecting the use of electronic information resources by the students of the College of Health Sciences at theOlabisiOnabanjo University, Sagamu. Ankrah and Atuase (2018) also established that poor Internet connection was the most significant challenge affecting effective access to e-resources by postgraduate students of the University of Cape Coast, Ghana. Hence, overcoming the above challenges would improve the use of electronic information resources by the respondents in the academic libraries studied.

Conclusion and Recommendations

The emergence and developments of Information and Communication Technologies (ICTs) have revolutionized almost all spheres of life, be it in education, industries, and agriculture health or business sectors. Today, the advent of electronic information resources has made information organizations and professionals to embrace the various forms of electronic information resources (EIR) like e-books, e-journals, e-mail, e-thesis and e-conferences etc. to supplement the print version of information resources for effective service delivery by all types of libraries. Hence, technological revolution has significantly transformed traditional libraries to electronic-based libraries, and in some instances, hybrid types. It is obvious from the findings that the

situation of electronic information resources in the tertiary institutions in Katsina State is far from been easy. This is due to inadequate ICT facilities, poor Internet connectivity, limited time for searching, and inconsistent power supply on the use of electronic recourse in the tertiary institutions studied. This result is worrisome and should therefore be addressed decisively and squarely. Based on the findings of the study, the following recommendations are offered:

1. The academic libraries under study should provide necessary and current ICT equipment, like adequate Internet bandwidth, so that users can access and download resources easily adequate computers in their libraries as well as extension of ICT library closing hours so that many users could have access at the same time.

2. The institutions should expand the ICT infrastructure in e-library and on campus so as to increase the access point and create hotspots around various locations in the campuses that will cover college, faculty or school in order to improve the accessibility of electronic resources.

3. The institutions should make provision for an alternative power supply system during power shortage in order to have smooth research and learning processes in the e-library.

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